



2022 Study

HOW DIGITAL ARE OUR SCHOOLS?

**Digital education in Germany.
A status report.**

iu
INTERNATIONAL
UNIVERSITY OF
APPLIED SCIENCES

DIGITAL EDUCATION IN GERMANY. WHAT'S THE SITUATION IN SCHOOLS?

THE DIGITALISATION OF SCHOOLS IS A MUCH-DEBATED TOPIC AMONG THE GERMAN PUBLIC. AND IT HAS BEEN FOR YEARS. THAT'S REASON ENOUGH TO TAKE A CLOSER LOOK AT "DIGITAL EDUCATION" IN GERMANY: HOW EXTENSIVELY DO SCHOOLS USE DIGITAL MEDIA – AND HOW WELL EQUIPPED ARE THEY? THE MOST RECENT STUDY CONDUCTED BY IU INTERNATIONAL UNIVERSITY OF APPLIED SCIENCES (IU) PRESENTS FACTS AND OPINIONS ON THIS TOPIC.

Digital education comes with many prerequisites. Above all: sufficient technical equipment for schools – and school staff with digital skills. 99.5% of surveyed teachers and senior leadership team members claim that they are confident navigating the internet.

When asked about digital infrastructure, 98.5% of school staff say that their school is connected to the internet, but a large majority state that it is not available in all necessary areas. **57.0% of respondents say that digital media such as videos is used at least regularly in their schools – and 35.1% say they are used at least sporadically.**

For many parents, that's not enough: **51.6% think that digital media is used too rarely in their child's school.** And they

would like schools to be better equipped with tablets and laptops. According to them, for example, class sets of tablets that can be used when needed are only available in 32.2% of cases. **65.8% of school staff surveyed say that they have tablets for their classes.**

Speaking of equipment: 65.7% of senior leadership team members view sufficiently equipping school pupils with digital devices as the biggest obstacle to digitalisation, followed by teachers' digital skills at 63.7%. This makes state funding all the more relevant: **41.5% of senior leadership team members say that their schools are already working with funding provided as part of the government's DigitalPakt scheme – and a further 40.0% have already applied or had their application granted.**

"WHEN IT COMES TO DIGITAL EDUCATION, IT'S NOT ABOUT SIMPLY REPLACING ANALOGUE TEACHING MATERIALS WITH DIGITAL FILES AND TABLETS. RATHER, DIGITAL EDUCATION MEANS IMPLEMENTING A STRATEGIC AND COMPREHENSIVE TEACHING AND LEARNING CONCEPT IN SCHOOLS, AND WHICH HAS TO BE COMPLETELY RE-THOUGHT ON A DIGITAL LEVEL."

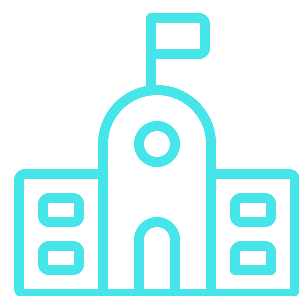


**Prof. Dr
Ulrich Kerzel**
Professor of Data Science and
Artificial Intelligence
at IU International University
of Applied Sciences

SURVEYED TARGET GROUPS

For this study, two target groups were surveyed in Germany:

683
TEACHERS AND
SENIOR LEADERSHIP
TEAM MEMBERS



944
PEOPLE WITH A TOTAL OF
1,268 SCHOOL-AGE CHILDREN*
IN THEIR HOUSEHOLDS



These icons show the target group that the results refer to.

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*For parents with more than one school-age child, child-related questions are asked in succession for two children.

DIGITAL EDUCATION IN GERMANY.

FIVE IMPORTANT TAKEAWAYS.

INTERNET AND DIGITAL MEDIA? MANY SCHOOLS DO NOT HAVE BLANKET COVERAGE AND DO NOT USE THEM ENOUGH.

68.6%

of school staff say that their schools have internet in all necessary areas.

43.0%

of school staff say that their schools only sporadically use digital media in their lessons.

PARENTS ARE CALLING FOR MORE DIGITAL MEDIA IN SCHOOLS.

51.6%

of parents think that digital media is used too rarely in their child's school.

TABLETS AS NEEDED: OFTEN AVAILABLE – BUT MORE ARE WANTED.

47.3%

of parents call for more sets of tablets in school classes.

65.8%

of school staff say that their schools provide sets of tablets in classes.

THE OBSTACLES TO DIGITALISATION? EQUIPMENT AND DIGITAL SKILLS.

65.7%

of senior leadership team members say that sufficiently equipping school pupils with devices is the biggest challenge in digitalisation.

63.7%

of senior leadership team members see teachers' digital skills as an obstacle.

THE GOVERNMENT'S DIGITALPAKT: MANY SCHOOLS ARE REQUESTING FINANCING.

41.5%

of senior leadership team members say that their schools are already working with funding provided as part of the government's DigitalPakt scheme.

40.0%

of senior leadership team members have already made an application or had their application granted.



THE DIGITAL LIVES OF SCHOOL STAFF.

IS EVERYONE ONLINE NOWADAYS?

99.5% of teachers and senior leadership team members are experienced internet users. 22.1% even create their own content for blogs and video channels – and 8.1% have advanced knowledge, e.g. of programming and installing web apps.

8.1

program or install & maintain web applications

22.1

create content
(e.g. blogs, video channels)

49.8

19.5

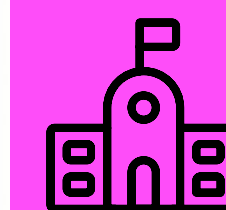
are confident using emails and chats
and reading websites

0.6 Very little to no internet skill

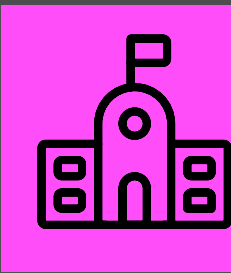
How would you rate your own internet skills?

In %: teachers and senior leadership team members

Due to rounding off, there could be marginal deviations in the results.



AND THE PUPILS? 79.8% OF PARENTS SAY THAT THEIR CHILDREN HAVE INTERNET SKILLS. 20.0% OF SCHOOL PUPILS STILL NEED TO LEARN HOW TO USE THE INTERNET.



PLENTY OF DEVICES, GOOD INTERNET. AN INSIGHT INTO THE HOMES OF TEACHERS AND STAFF.

Which devices do you have at home?

In %: teachers and senior leadership team members

Do you have internet at home that you can use to call up teaching-relevant content and, if necessary, hold lessons via video conference?

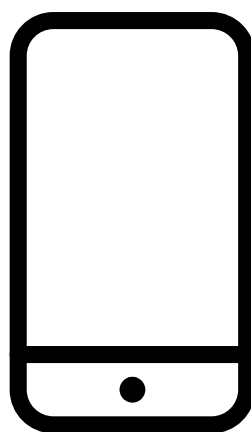
In %: teachers and senior leadership team members

AVAILABLE DEVICES



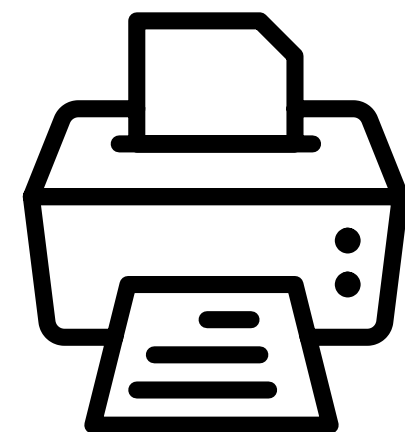
90.6

LAPTOP/DESKTOP



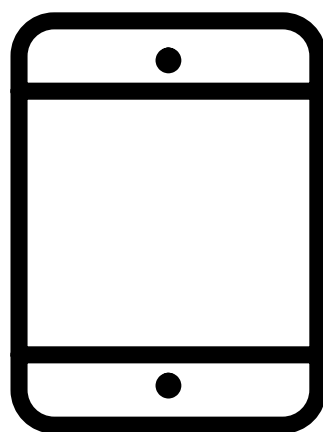
80.8

SMARTPHONE



78.0

PRINTER



77.3

TABLET

INTERNET QUALITY



70.7

Good enough for video conferences, livestreaming lessons for school pupils



17.3

Good enough for the use of school portals, LMS, chat, etc.



8.5

Good enough for email, reading websites



2.2

Only mobile data



1.2

No internet



MANY TEACHERS AND SCHOOL LEADERS ARE CONFIDENT NAVIGATING ONLINE APPLICATIONS – THIS IS REFLECTED IN THE RESULTS OF THE STUDY. HOWEVER, THEY ARE OFTEN UNABLE TO RELY ON THE IT SYSTEMS BECAUSE THEY ARE REPLACED TOO FREQUENTLY. IN THE END, THE SAFEST BUT PERHAPS WORST SOLUTION IS IMPLEMENTED, AND EVERYONE IS FORCED TO WORK WITH IT. UNFORTUNATELY THERE ARE NO DEDICATED IT SPECIALISTS WITH IN-DEPTH KNOWLEDGE AND WHO CAN RESPOND QUICKLY IN ORDER TO SOLVE IT PROBLEMS OR PROVIDE HELP. THIS IS OFTEN DONE BY TEACHERS, WHO ARE ALSO BUSY TEACHING.”



Prof. Dr. Ulrike Lichtinger
Professor of School Education, employee at IU International University of Applied Sciences

DIGITAL LESSONS IN GERMANY.

DESIRE VS. REALITY.

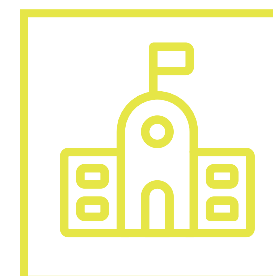
Blanket internet coverage in schools is not a given.

Admittedly, 98.5% of school staff say that their school is connected to the internet – but only around two thirds of those say that internet is available in all necessary areas.

The surveyed parents observe a larger deficit:

93.7% say that their children's schools have internet, but only 40.6% of those say that it is available in all necessary areas. In their experience, 6.3% of schools have no internet at all.

The question about internet use remains: How digital are lessons in German schools?



**Is your school already
connected to the internet?**

In %: teachers and senior leadership
team members

Yes, all of the
necessary areas

68.6

Yes, but only
in parts

29.9

1.5 No

Yes, all of the
necessary areas

40.6

Yes, but only
in parts

53.1

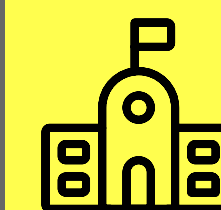
6.3 No



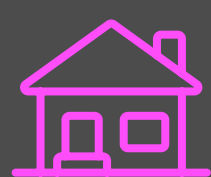
**Is your child's school already
connected to the internet?**

In %: people with school-age
children in their household

DIGITAL MEDIA IN LESSONS? IN MANY SCHOOLS, IT'S AN EXCEPTION.



57.0% of school staff say that digital media are regularly or predominantly used in lessons, 2.2% of those work with flipped classrooms. Conversely, this means: **according to 43.0% of school staff surveyed, their schools never or very infrequently have digital lessons.**



WHAT PARENTS HAVE TO SAY: ONLY 37.9% OF THEIR CHILDREN'S SCHOOLS HAVE DIGITAL AND MULTIMEDIA LESSONS. 31.4% OF THOSE OCCUR REGULARLY, 4.4% PREDOMINANTLY AND 2.1% IN FLIPPED CLASSROOMS.

What stage is your school in?

In %: teachers senior leadership team members

No digital media is used

2.1

Internet is available in parts or all areas of the school

5.8

Sporadic use of digital media in lessons

35.1

Regular use of digital media in lessons

44.8

Lessons predominantly make use of digital media

10.0

Flipped classroom: pupils work independently on the material, while in-person and online phases are used for discussion and to go into the material in more depth.

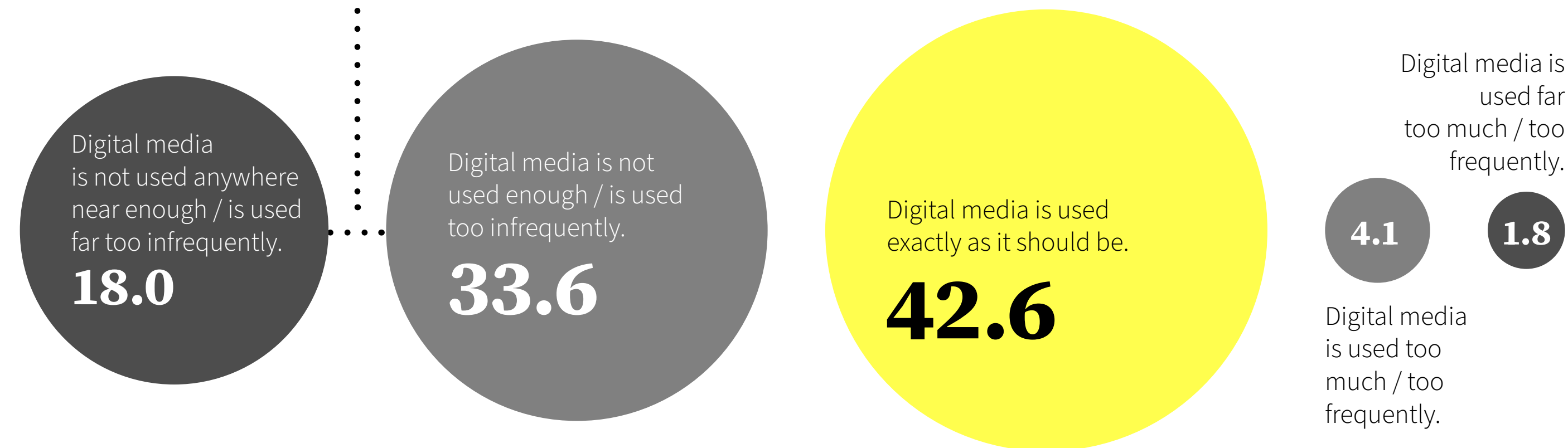
2.2

! IN BOTH SURVEYS, GRAMMAR SCHOOLS MEET WITH A POSITIVE REPOSE. THEIR CLASSES USE DIGITAL MEDIA MORE OFTEN THAN AVERAGE. 71.0% OF SCHOOL STAFF SAY THAT DIGITAL MEDIA IS USE AT LEAST REGULARLY THERE.

“SATISFACTORY” TO “MUST TRY HARDER”: PARENTS CALL FOR MORE DIGITAL MEDIA IN LESSONS.

42.6% of surveyed parents think that digital media is used to an ideal extent in their child's school. **However, more than half (51.6%) find that digital media is not used enough.**

Parents who think that digital lessons in their child's school are insufficient have a range of reasons: They especially often name the **limited use and promotion of digital media and a lack of expertise and engagement amongst teaching staff**. But the confident use of digital media is important to their children's future. This was stressed by 12.5% of surveyed parents who think that digital media is not used enough.



What do you think of the digital media used in your child's school? In %: people with school-age children in their household



20.8 Digital media is barely used in schools.

15.7 Promotion of digital media in schools needs improvement

12.5 Nowadays, the use of digital media is important for learning how to navigate it in the future (e.g. internet security, professional life)

12.3 Lack of skill/training/engagement in digital media amongst teachers

10.6 Lack of school resources (e.g. digital devices, specialists, financial means)

Why do you think digital media is not used enough or is used too infrequently in your child's school?

In %, open question, grouped, top 5 answers: people who have school-age children in their household and think that digital media is not used enough / nowhere near enough or used too infrequently / far too infrequently

”

**IT WILL BE SOME
TIME BEFORE
DIGITAL LESSONS
ARE IMPLEMENTED
ACROSS THE BOARD.**

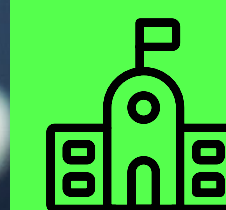
However, realise the full potential of developments such as apps and artificial intelligence, school staff need to be better versed in data science. Then we would have many more teachers who could make a difference. Because it is already clear that school pupils can be taught certain skills with the help of educational apps – good examples of this are apps for numeracy exercises. Furthermore, elements such as gamification increase motivation.”

Prof. Dr Ulrich Kerzel

Professor of Data Science and Artificial Intelligence
at IU International University of Applied Sciences

EQUIPMENT IN SCHOOLS.

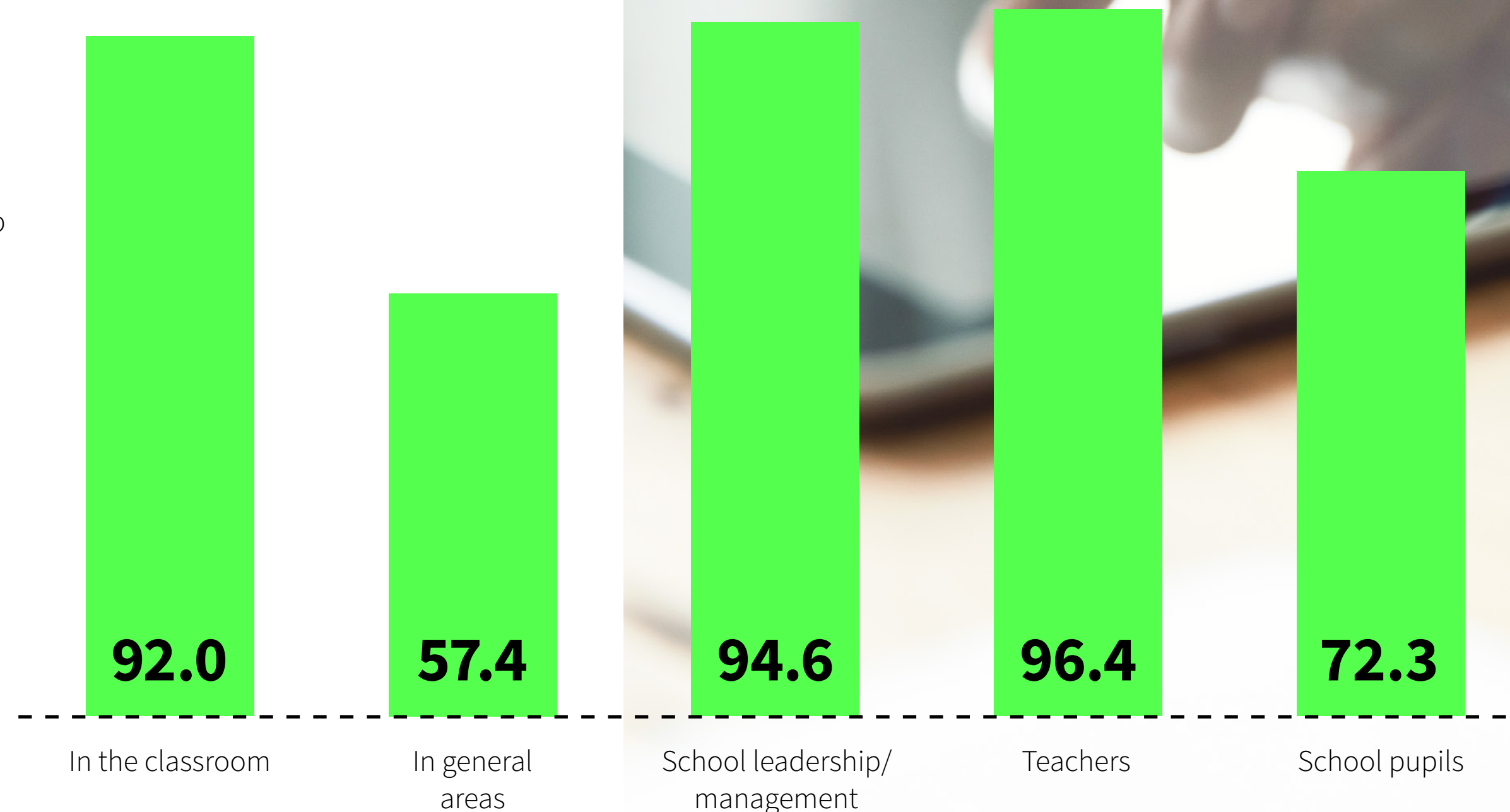
HARDWARE, SOFTWARE, OPINIONS.



Internet in schools is one thing. But where can it be used and who has access to it? 98.5% of school staff say that their school is connected to the internet. Nine out of ten school staff surveyed have internet in their classrooms. However, only just under three quarters of pupils can even use the school internet.

Who can access the internet and how can it be accessed?

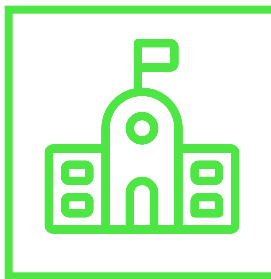
In %: teachers and senior leadership team members; only if the school is already connected to the internet



A LOT OF WIFI, NOT A LOT OF SMARTBOARDS. THE SITUATION IN GERMAN CLASSROOMS.

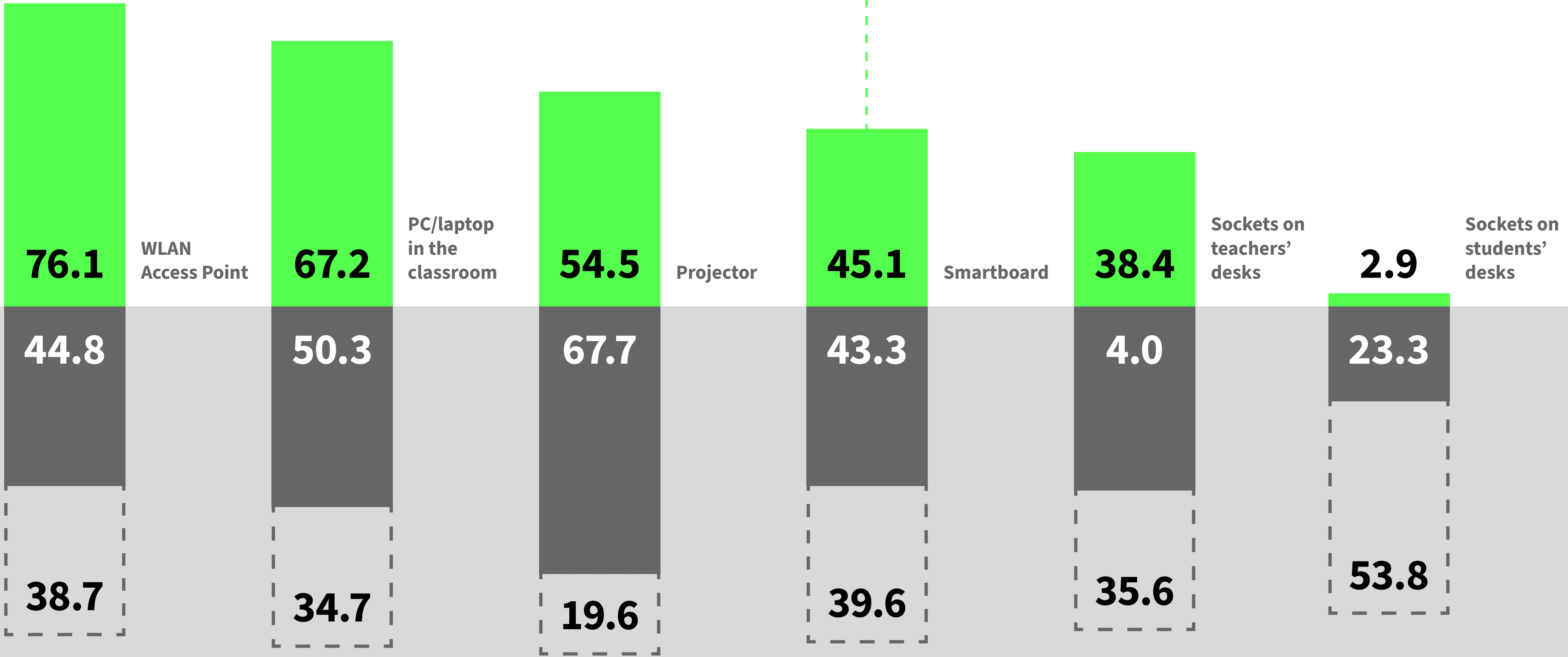
Three quarters of school staff say that their classrooms are fitted with WiFi access points. PCs, laptops and projectors are also available in significantly more than half of rooms. But it's a different story when it comes to smartboards: only 45.1% of school staff surveyed have one in their classroom. And sockets on students' desks? Almost none.

The parents surveyed are calling for more smartboards and digital infrastructure: They say that not even half of their children's classrooms have a WiFi access point or a smartboard – and only 50.3% have a laptop or PC. Many parents think that missing equipment needs to be restocked.



What devices do you already have in your classrooms? In %: teachers and senior leadership team members; only if the school is already connected to the internet

Please tell us which devices are already available in the classrooms of your child's school and which devices you think should be available. In %: people with school-age children in their household



69.6% OF SCHOOL STAFF AT COMPREHENSIVE/DISTRICT/HIGH/COMMUNITY SCHOOLS HAVE SMARTBOARDS IN THEIR CLASSROOMS. IN COMPARISON: FOR SCHOOL STAFF FROM OTHER TYPES OF SCHOOLS, IT'S 40.0%.

EQUIPMENT: NOT ENOUGH, HELP ON DEVICES: GOOD.

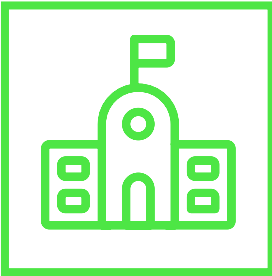
65.8% of teachers and senior leadership team members say that their schools have class sets of tablets that can be used. A quarter of school staff say that for children to take part in digital lessons they must or can bring their own devices from home (bring your own device). This requires them to have a tablet or laptop in their household.

Parents want their children to have more digital devices – particularly devices provided by the school. An example: while 21.6% of school pupils are given their own tablet by the school, a further 52.7% of parents would also like a tablet for their child.

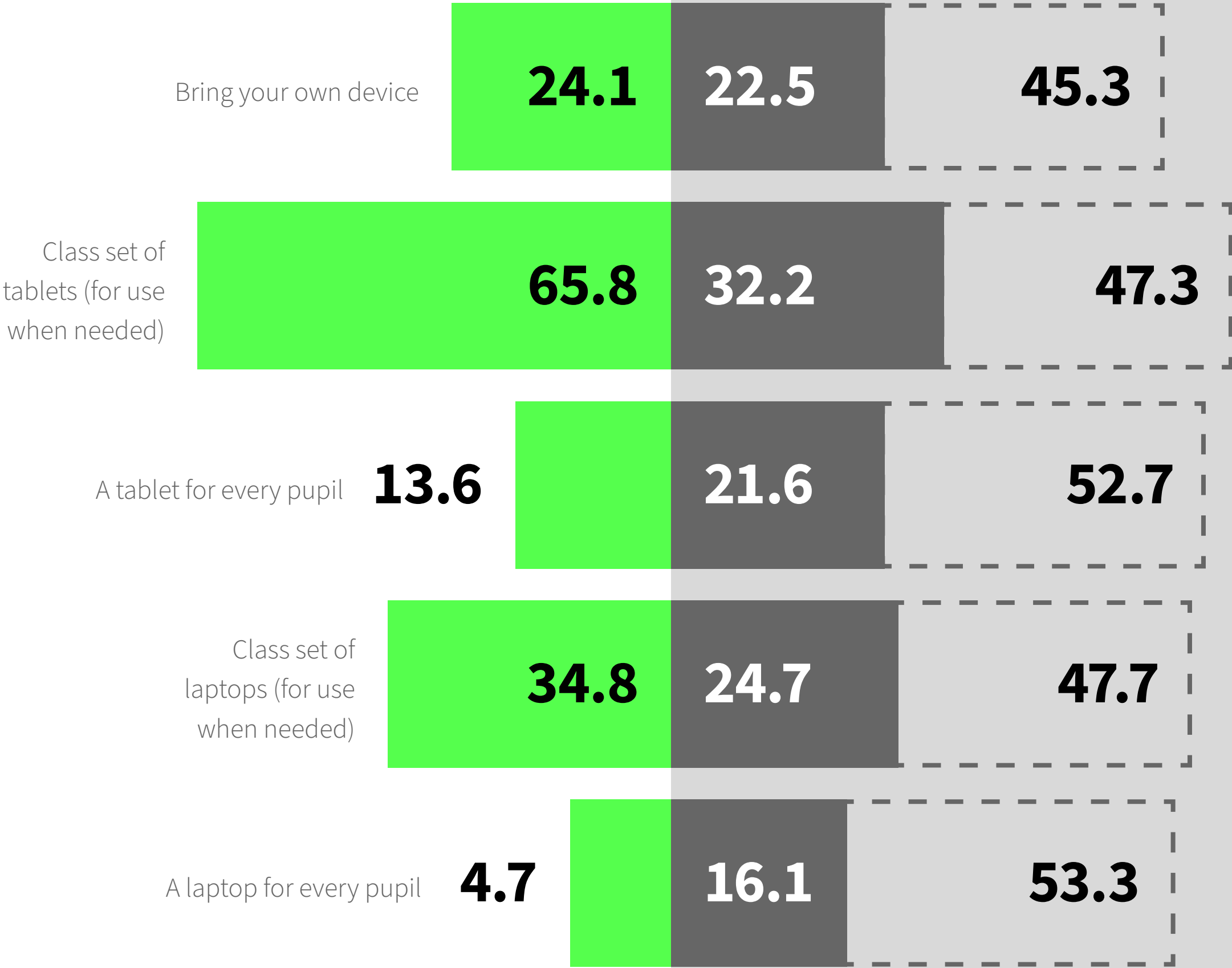
72.9%
OF PARENTS SAY THAT
TEACHING STAFF HELP THEIR
CHILD USE DIGITAL DEVICES.

Do teachers help the children use the digital devices in school?
People with school-age children in their household

Which devices does your school provide pupils with? In %: teachers and senior leadership team members; only if the school is already connected to the internet



Please tell us which devices the school provides for your child and which devices you think the school should provide. In %: people with school-age children in their household



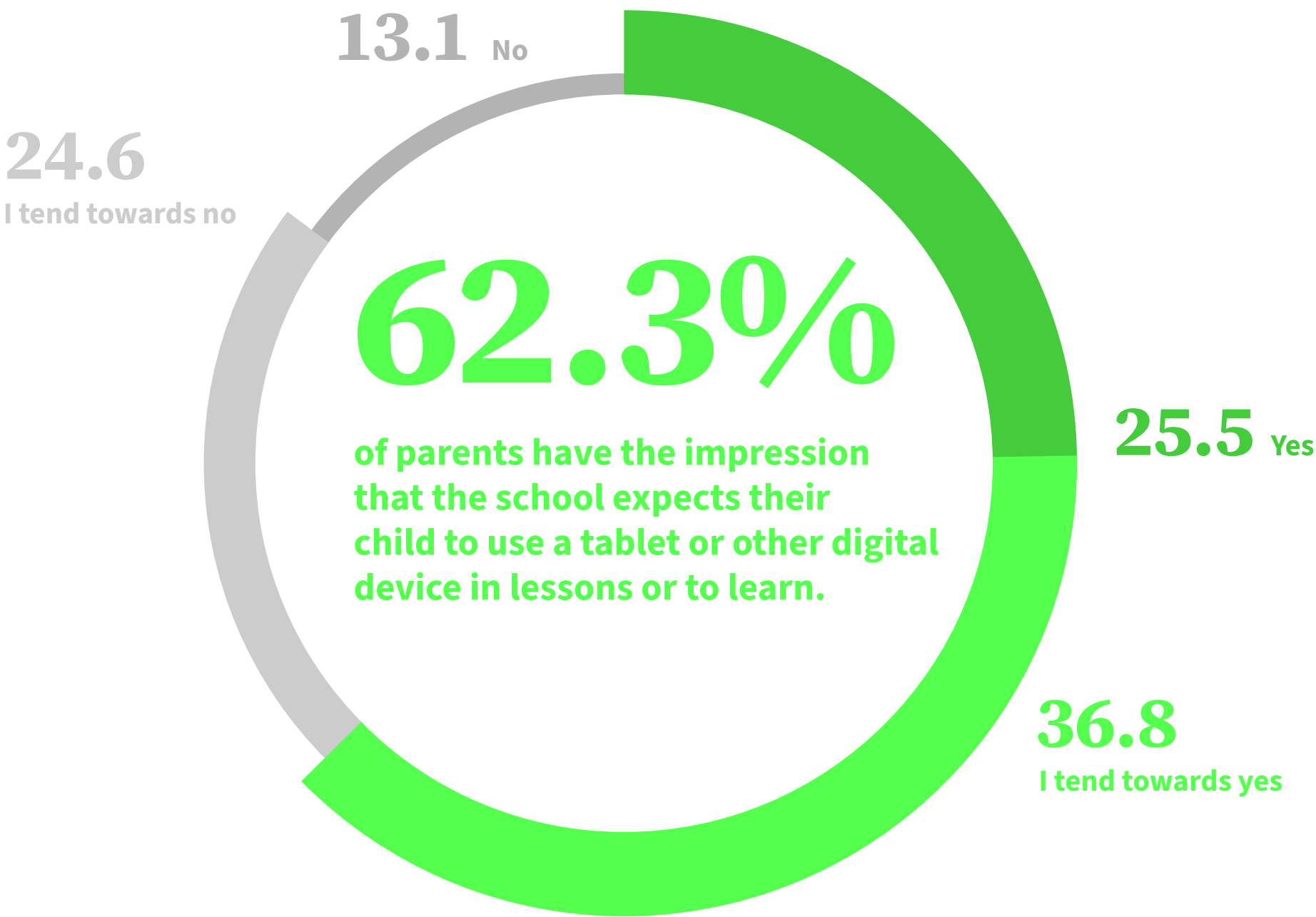
■ Is provided □ Should be provided

DIGITAL DEVICES AS A GIVEN. BUT WHO COVERS THE COST?

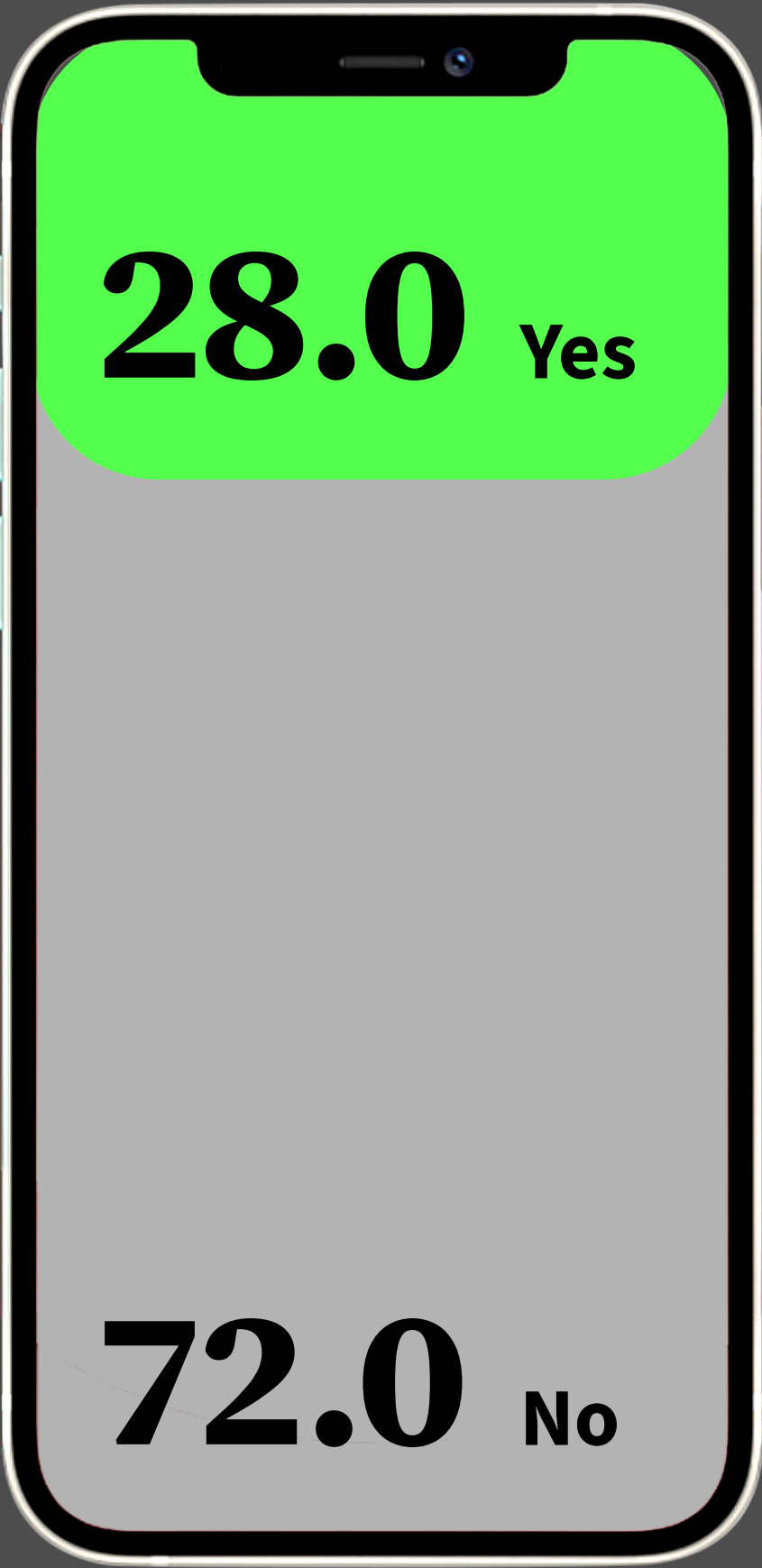
62.3% of parents have the impression that the school expects their child to use a digital device in lessons or to learn.

To go back to the example of tablets: If just 21.6% of parents surveyed and 13.6 % of school staff surveyed say that every child is to be provided with a tablet by the school, who is expected to provide the missing devices?

Do you feel that the school expects your child to use tablets (or similar devices) in lessons / to learn? In %; people with school-age children in their household



**! MORE THAN A QUARTER OF PARENTS SAY THAT THEIR CHILD’S SCHOOL HAS “DIGITAL CLASSES”.
● THE REQUIRED DEVICES ARE PROVIDED BY THE SCHOOL IN 71.1% OF CASES.**



Does your child’s school have “digital classes” (e.g. “tablet classes” in which the children predominantly work on tablets)? In %: people with school-age children in their household

“

THE LACK OF EQUIPMENT IN SCHOOLS IS LARGELY DOWN TO STRUCTURAL REASONS.

Often, schools and local authorities are advised by partners who do not have the necessary skills at the point where digitalisation meets pedagogy. Furthermore, devices such as smartboards are often very complex and teachers are unable to use them. And purchasing the devices for students to use means major costs for schools. If the school does not provide a device, it can present a major challenge for parents whose income does not cover this kind of purchase – so the inequality of opportunity is soon noticeable.”

Prof. Dr Ulrike Lichtinger

Professor of School Education,
employee at IU International University of Applied Sciences



EDUCATIONAL APPS ARE POPULAR. WHEN THEY ARE FREE TO ACCESS.

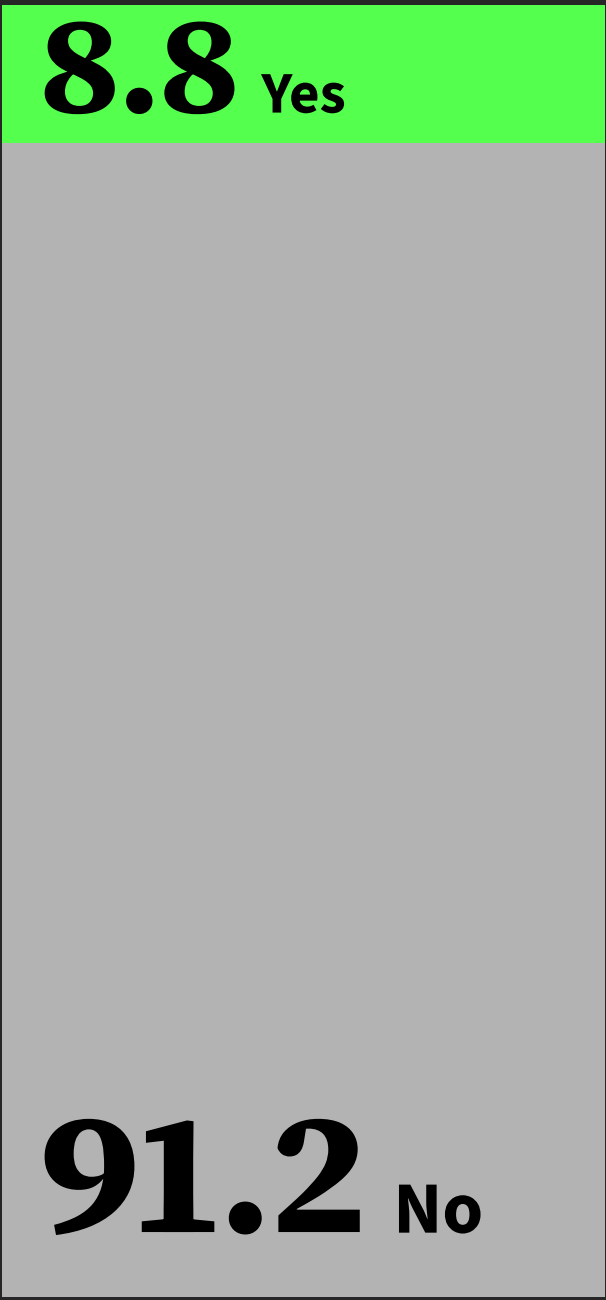


! 96.6% OF CHILDREN WITH FREE ACCESS TO AN EDUCATIONAL APP USE IT OFTEN, SOMETIMES OR IN SOME CASES.

FREE
EDUCATIONAL
APPS
FROM SCHOOL



Does your child’s school offer free access to educational apps? In %: people with school-age children in their household



PAID
EDUCATIONAL
APPS
(ADDITIONAL)

Do you use (additional) paid educational apps? In %: people with school-age children in their household



Prof. Dr
Ulrike Lichtinger
Professor of
School Education,
employee at
IU International University
of Applied Sciences

“EDUCATIONAL APPS ARE ENJOYING MORE AND MORE POPULARITY – THIS IS REFLECTED IN THE RESULTS OF THE STUDY. BUT PEDAGOGICAL CONCEPTS CANNOT ALWAYS BE DEVELOPED WITH THE SAME SPEED AS TECHNOLOGIES SUCH AS APPS. FOR THIS REASON, SCHOOLS SHOULD HAVE PROFESSIONAL LEARNING COMMUNITIES IN WHICH TEACHERS CAN EXCHANGE INFORMATION. BUT PUPILS COULD ALSO PROVIDE USEFUL INSIGHTS, SO THAT TEACHERS “LEARN BY TEACHING”.



THE STRATEGIES AND OBSTACLES ASSOCIATED WITH THE DIGITALISATION OF SCHOOLS.

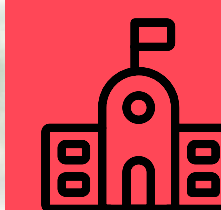
LOOKING TO THE FUTURE.

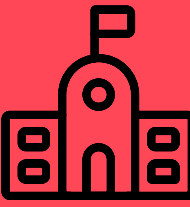
How are digitalisation strategies devised in schools? **The key measure named by senior leadership team members was discussion amongst staff,** followed by the involvement of external experts.

In addition, 41.5% of these have already made use of funding from the government's DigitalPakt in order to digitalise their schools.

How do you devise your school's digitalisation strategy?

In %: only senior leadership team members surveyed



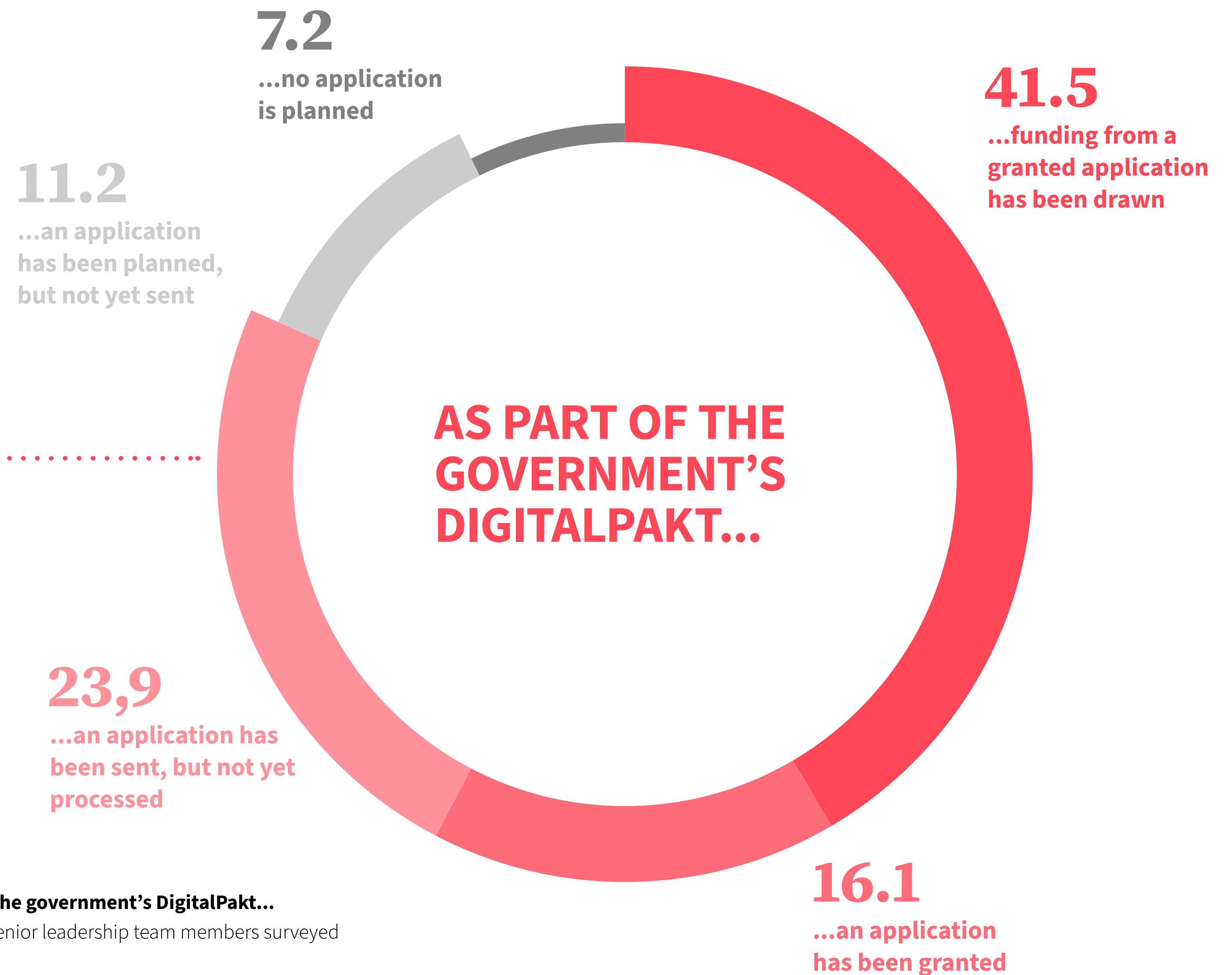


**THE GOVERNMENT'S
DIGITALPAKT IS BEING USED
TO INVEST IN THE
FUTURE OF SCHOOLS.**

81.5%

**OF SENIOR LEADERSHIP TEAM
MEMBERS SAY THEIR SCHOOLS ARE
ALREADY WORKING WITH FUNDING
PROVIDED AS PART OF THE GOVERN-
MENT'S DIGITALPAKT SCHEME, HAVE
ALREADY APPLIED OR HAVE HAD
THEIR APPLICATION GRANTED.**

As part of the government's DigitalPakt...
In %: only senior leadership team members surveyed

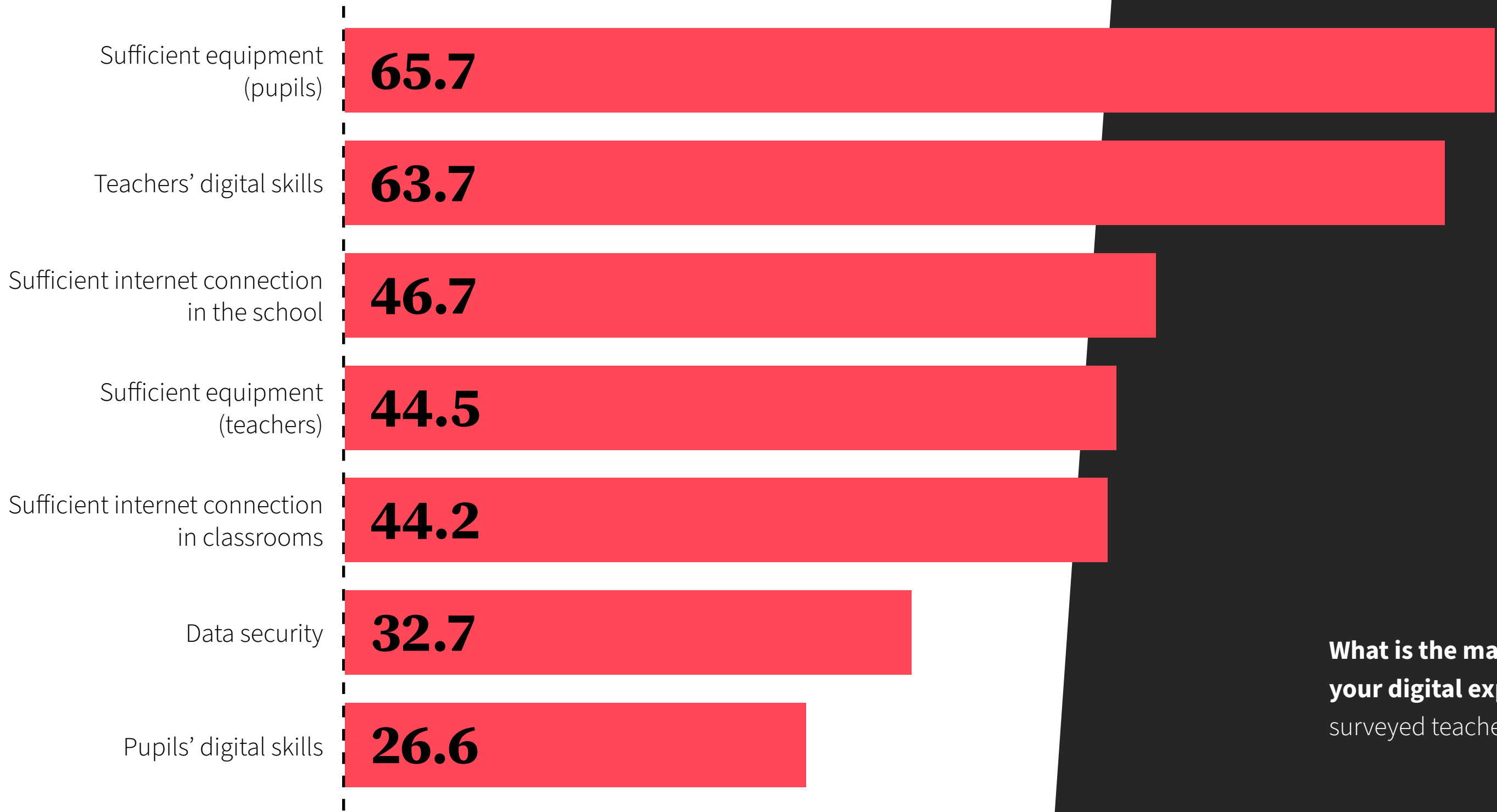


THE BIGGEST OBSTACLES TO DIGITALISATION? EQUIPMENT AND SKILLS.

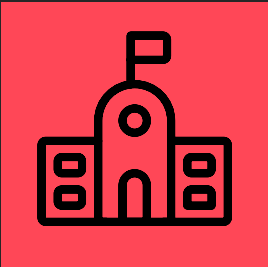
Sufficient equipment for school pupils and teachers – and teachers’ digital skills. For senior leadership team members, these are the two biggest obstacles to digitalisation. In their opinion, further challenges include the internet connection of schools and classrooms.

Just as a reminder: 29.9% of surveyed teachers and senior leadership team members say that the internet is not available in all necessary school areas.

In the opinion of the senior leadership team members, what are the biggest obstacles to digitalisation? In %: only senior leadership team members surveyed



A LITTLE BIT OF TRAINING, A LOT OF TRIAL & ERROR. HOW TEACHERS BUILD UP THEIR DIGITAL EXPERTISE.



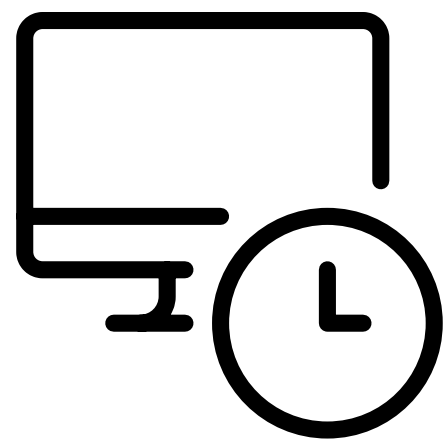
What is the main way you increase your digital expertise? In %: only surveyed teachers

WORRIES ABOUT SCREEN TIME AND CYBER SECURITY. PARENTS' CONCERNS.

On the one hand, 51.6% of parents want to see more digital media in lessons whereas 42.6% think that digital media is used exactly as it should be; on the other hand, they have concerns about the digitalisation of school and lessons: **too much screen time for their children, not enough data security and protection and underdeveloped pedagogical concepts are among their biggest worries.**

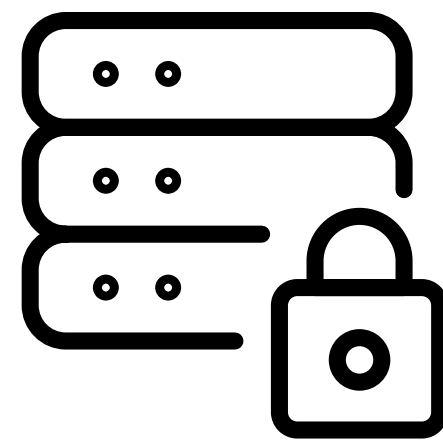
What concerns do you have about the digitalisation of schools?

In %: people with school-age children in their household



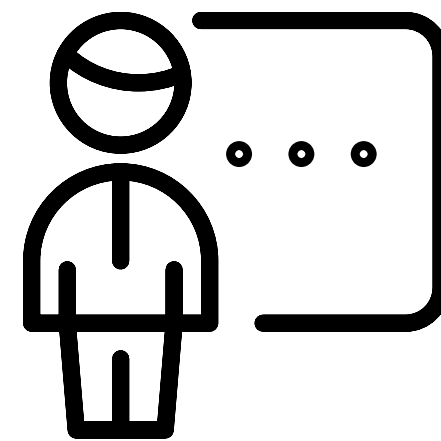
50.1

**TOO MUCH TIME
LOOKING AT A SCREEN**



46.0

**DATA
SECURITY**



39.2

**PEDAGOGICAL
CONCEPTS ARE NOT
FULLY DEVELOPED**



36.0

DATA PROTECTION

“

Teachers and in particular senior leadership team members should be responsible for responding to parents' main worries, e.g. concerns about screen time, data security and data protection. It is unclear, however, whether parents are aware of the difference between data protection and data security.”

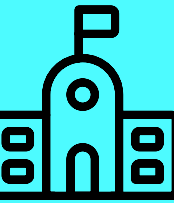


**Prof. Dr
Ulrich Kerzel**
Professor of Data
Science and Artificial
Intelligence at
IU International
University of Applied
Sciences



FACTS ABOUT THE STUDY PARTICIPANTS.

ABOUT THE STUDY.



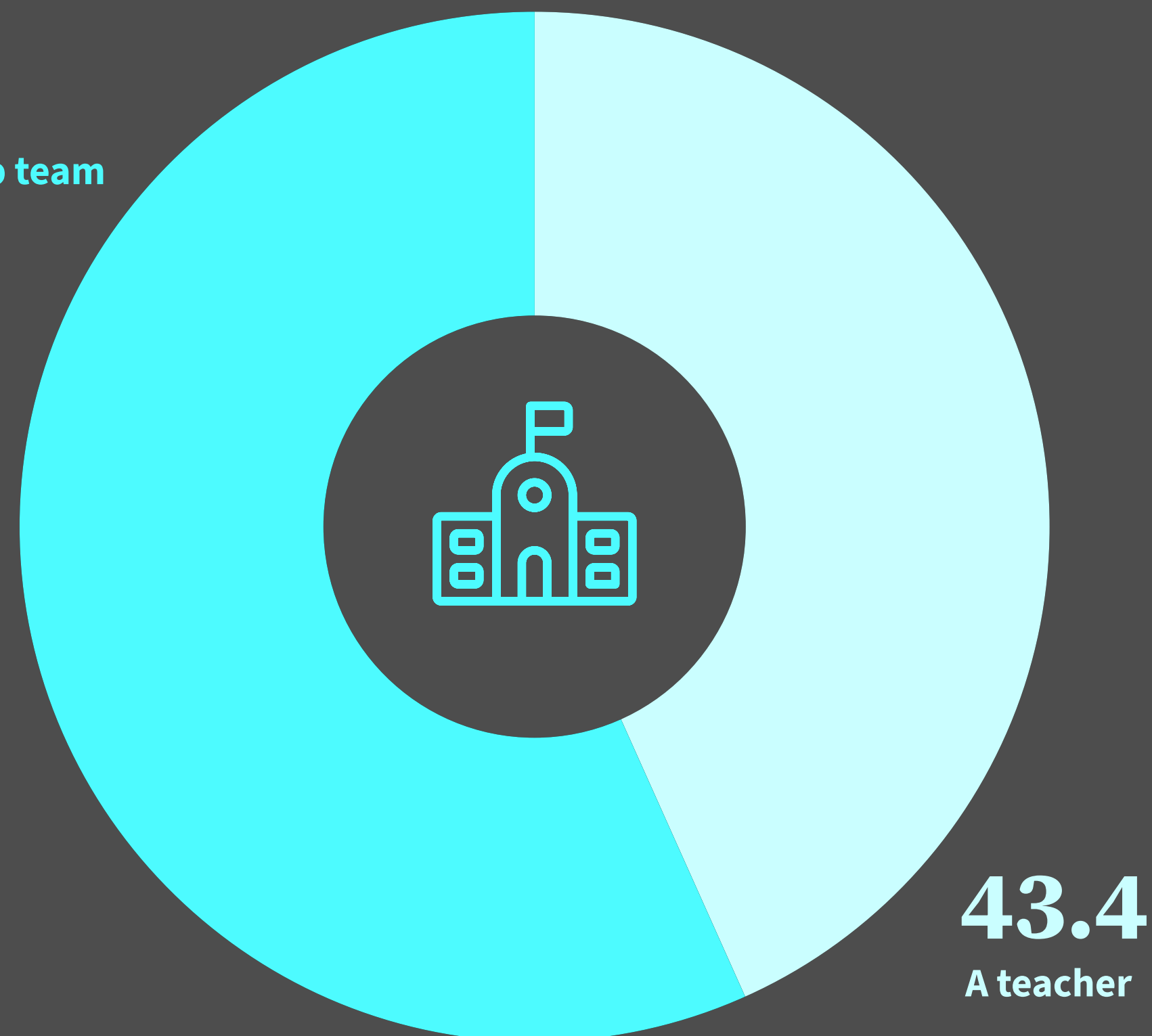
ROLES WITHIN THE SCHOOL. MORE MEMBERS OF SENIOR LEADERSHIP THAN TEACHERS.

Are you...?

In %: teachers and senior leadership team members

56.7

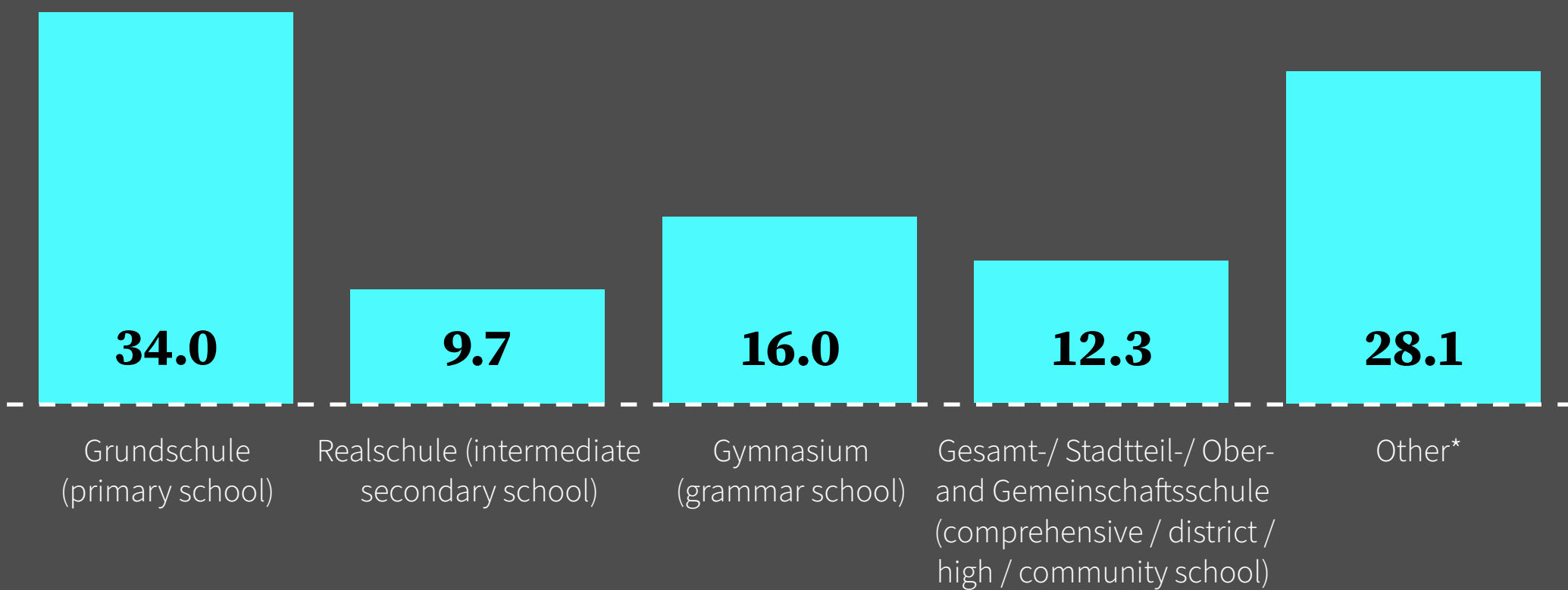
A member of the
senior leadership team



A THIRD OF SCHOOL STAFF WORK IN PRIMARY SCHOOLS. ONE IN SIX WORK IN GRAMMAR SCHOOLS.

What kind of school do you work at?

In %: teachers and senior leadership team members



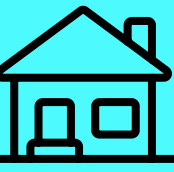
*Hauptschule (lower secondary school), Berufsschule (vocational school), Förderschule (special school), Wirtschaftsschule (commercial school), alternative schools (e.g. Steiner school), Fachschule/-akademie (specialist training school/academy), Gemeinschaftsschule (community school) and other types of schools.

683

teachers and senior leadership team
members surveyed in German schools

FACTS ABOUT THE STUDY PARTICIPANTS.

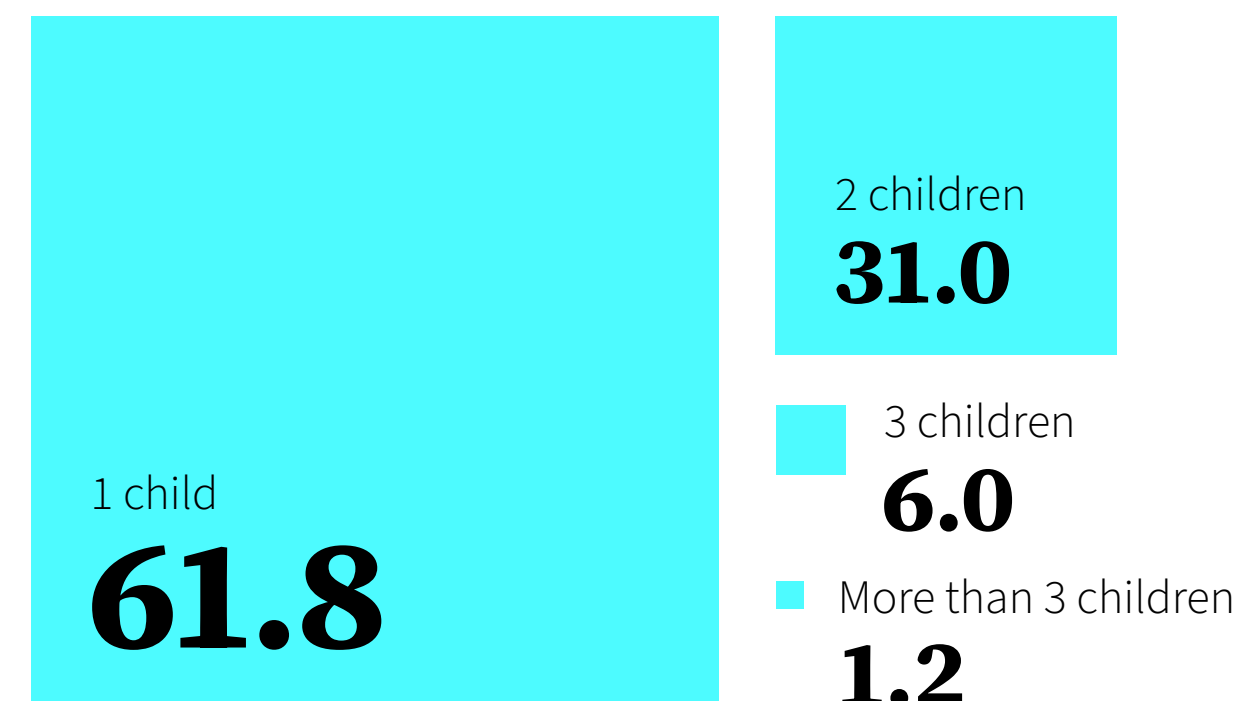
ABOUT THE STUDY.



ALMOST TWO THIRDS OF PARENTS HAVE ONE SCHOOL-AGE CHILD IN THEIR HOUSEHOLD.

Do any school-age children live in your household?

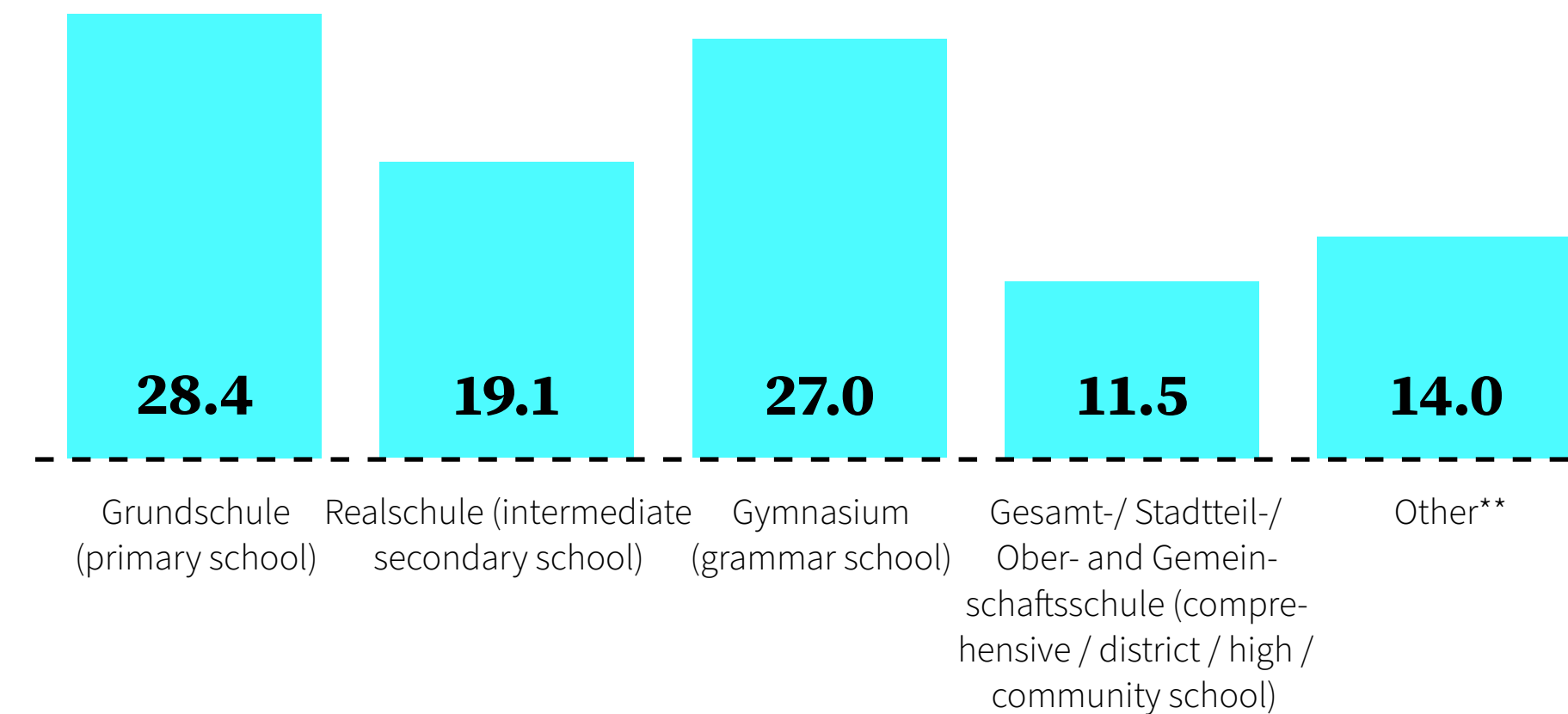
If yes, how many? In %: people with school-age children in their household



A QUARTER IN PRIMARY SCHOOL, A QUARTER IN GRAMMAR SCHOOL.

What kind of school does your child attend?

In %: people with school-age children in their household



944

people surveyed in Germany, with a total of 1,268 school-age children* in their households

*For parents with more than one school-age child, child-related questions are asked in succession for two children.

**Hauptschule (lower secondary school), Berufsschule (vocational school), Förderschule (special school), Wirtschaftsschule (commercial school), alternative schools (e.g. Steiner school), Fachschule/-akademie (specialist training school/academy), Gemeinschaftsschule (comprehensive school) and other types of schools.

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The Ministry of Economics, Science and Digital Society of the State of Thuringia is responsible for the IU International University of Applied Sciences at all study locations in matters relating to higher education law.

Survey of teachers and senior leadership team members

Survey period: 1 March – 31 October 2021
Anonymous survey via Unipark
Recruitment: survey was sent to trade-, parent- and youth-magazines, to schools and trade associations, as well as to national parent and school pupil representative in Germany

Survey of people with school-age children in their household

Survey period: 7–10 March 2022
Anonymous survey via Tivian
Panel: GapFish

Contact us

If you have any questions or comments,
please contact us: research@iu.org

You can also find us on:

