Google for Education

# Future of the Classroom

Emerging Trends in K-12 Education
Netherlands Edition

# Our approach

This report is part of a series on the evolution of K-12 education and maps out current and emerging trends in classroom education. In collaboration with our research partner **Canvas8**, we conducted a global analysis spanning:

- Fourteen expert interviews with global and country-specific thought leaders in education
- Academic literature review focusing on the last two years of peer-reviewed publications
- Desk research and media narrative analysis across the education sector, including policy research and teacher surveys, as well as input from Google for Education representatives across the globe

We acknowledge that some of the areas discussed in this report are ones that overlap with Google-led products and programs. In order to maintain a focus on the research and studies presented, we've intentionally excluded them.

# The Dutch are leading vocational programs

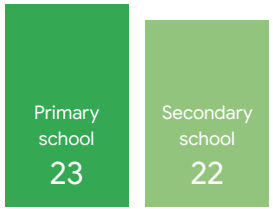
The Dutch are investing in education – in 2017, the government spent 5.2% of its GDP on education.[1] There is a particular investment in secondary vocational programs, with an internationally-respected vocational education and training system.[2]

At the same time, teachers in the Netherlands are teaching long hours – a workload that has contributed to the current teacher-shortage in the country. Technology is increasingly seen as a tool that can be harnessed to reduce work pressure on teachers, and improve education.

**"People are becoming more and more aware of the need for an update of the curriculum. Discussion is around the addition of digital literacy and technology, preparation for technology education and the broader introduction of technology in K12 education that has really taken hold."**

Michael van Wetering,
strategic advisor of Innovation at Kennisnet

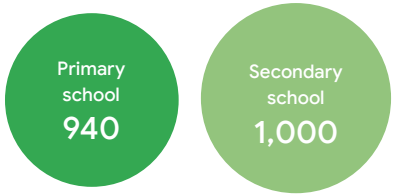
# The Dutch classroom at a glance




## 23

students is the average class size for Dutch public primary schools, slightly higher than the OECD average of 22.

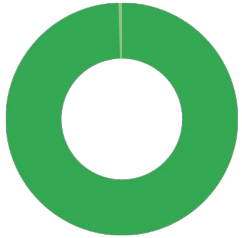
OECD (2016)[2]




## 940 hours

are worked on average by primary school teachers in the Netherlands every year, higher than the OECD average of 799 hours. Dutch lower-secondary school teachers work an average of 1,000 hours every year, higher than the OECD average of 913 hours.

OECD (2018)[2]



## 99.8%

of 5-14 year olds are enrolled in education in the Netherlands – one of the highest rates among OECD and partner countries.

OECD (2016)[15]

# Key Trends

From our Global Report, we've analyzed three of the most prominent trends in Dutch K12 classrooms

### 01 Emerging Technologies

Schools are incorporating emerging technologies into the classroom, to create more innovative and engaging teaching methods.

### 02 Innovating Pedagogy

Motivated teachers have more engaged classes, and they want to streamline administrative tasks to focus on teaching.

### 03 Student-led Learning

There is a desire to give students more agency over their education, from what they learn to how the classroom operates.

**"Because of our globalized and digitalized world, there's just so much more information than there used to be. The question is how to choose the right information rather than knowing everything."**

Dr. Hanna Dumont, Educational Psychologist and Researcher in International Education

# Emerging Technologies

By 2022, it's estimated that, per-month, there could be 2 billion mobile augmented reality (AR) users worldwide.[4] Research on AR in the classroom has confirmed that AR in educational settings improves learning performance and encourages learning motivation.[5]

Incorporating technology in the classroom requires commitment to digital equipment and connectivity. In the Netherlands, 65% of primary schools are classified as "highly digitally equipped and connected," meaning that, per-number-of-students, they have a high amount of digital equipment such as laptops, smartboards, cameras, and a high broadband speed (above 100 mbps). This is almost double the EU level of 35%. At the lower- and upper-secondary school levels in the Netherlands, this number rises to 81% and 77%, respectively, which still exceeds the EU levels of 52% and 72%.[6]

**81%**

of Dutch lower secondary schools are "highly digitally equipped and connected."

European Commission (2017-18)

# 56%

of Dutch lower secondary schools have both strong school policy and strong school support for integrating digital technologies.

EU Commission (2019)

Schools are increasingly recognizing the functional uses for artificial intelligence (AI) and machine learning, and how these can be used in the classroom to create exciting, engaging experiences for students. Schools are looking for more ways to incorporate emerging technologies, such as virtual reality (VR), AR, and AI into learning in the classroom.

Crucial to the adoption of emerging technologies in the classroom are school policies and support. In the Netherlands, while 56% of lower secondary schools have both strong school policy and strong school support for digital technology, only 24% of primary schools have a combined strong school policy and strong school support for this technology. These numbers remain higher than the European average. Meanwhile, 7% of lower secondary schools and 29% of primary schools in the Netherlands have weak policy and weak support for digital technology.[6]

**“I don’t think that technologies, per se, are going to change classrooms if they’re not addressing the deep level of learning.”**

Dr. Hanna Dumont, Educational Psychologist and Researcher in International Education

# Innovating Pedagogy

In the Netherlands, primary school teachers teach an average of 940 hours a year, which far surpasses the OECD average (across 36 European, American, and emerging economy countries) of 799 hours.[2] Dutch secondary-school teachers also teach in classrooms where the number of students-per-teacher is one of the largest among OECD and partner countries with available data.[15] Related to this burdensome workload, Dutch primary schools are facing a deficit of teachers – September 2018 saw a 1,300 teacher shortage, which is expected to rise to over 10,000 by 2027.[8] [9]

Since teachers globally spend an average of three hours a day on work-related tasks, such as grading or lesson planning,[7] there is considerable scope for technology to innovate in how teachers can meet learning objectives under pressure.

**1,300**

primary school teachers is the current teacher shortage in the Netherlands.

PO-Raad (2018)

"Lesson planning or marking takes a disproportionate amount of time. This is where technology can be leveraged to free-up time and allow teachers to do what they're meant to be doing – which is teaching."

Vikas Pota, Group CEO of Tmrw Digital and Chairman of the Board of Trustees of the Varkey Foundation

Responding to the excessive pressures placed on primary school teachers in the Netherlands, the Dutch government has signed the 'work-pressure agreement' to reduce work demands in primary education. The government is investing €237 million in primary schools, during the 2018-2019 academic year, to help support teachers by minimizing administrative tasks.[10]

Teachers in the Netherlands are recognizing that technology can be harnessed as a tool to streamline the day-to-day, so they can focus on their classrooms and teaching methods. Decisions on government spending have included investment in an IT tool that automatically produces reports.[3]

**"The changes in the classroom mean there is more focus on teachers discussing their experiences and learning from each other on a weekly basis. That is something that I didn't see two or three years ago."**

Michael van Wetering, strategic advisor of Innovation at Kennisnet

# Student-led Learning

In order to prepare students for the future, student-led learning approaches are growing in popularity to help build creativity, individuality, and independence. Dutch schools in particular are built for this innovation, as their decentralized structure of governance has the highest rate of making education policy decisions on the regional or sub-regional level of government among OECD and partner countries. This allows Dutch schools to flex to meet the needs of the Onderwijs2032 (Education 2032) government initiative, to innovate learning to meet 21st century challenges.[15] [16]

In an effort to encourage student agency, most secondary schools in the Netherlands offer multiple educational programs and allow students the flexibility to switch between general and vocational tracks. Year-on-year research has shown that this student-led approach to learning can help prevent dropouts, with as little as 0.9% of students dropping out of Dutch secondary education.[12]

**55.6%**

of Dutch secondary students graduated with a pre-vocational qualification in 2017.

Dutch Inspectorate of Education (2017)

"Giving students agency could improve the connection between real life and what you teach in school. This also goes into motivation, because students understand why they are learning this."

Michael van Wetering, strategic advisor of Innovation at Kennisnet

An example of this ethos in practice are the Dutch Agora schools, which eschew standard classrooms for co-working spaces and position children as leaders of their own education – for example, the day begins with students writing and sharing their "challenges" or plan for the day. Teachers who aspire to work in Agora classrooms are asked to deliver lessons for 75% of classroom time, allowing the remaining 25% to be allocated for student creativity. In fact, teachers in Agora schools are called "coaches," because they steer students and provide ideas but build-in time for students to guide their own education. Agora students "learn how to learn" – a skill they can apply for the rest of their lives.[14]

**"There shouldn't be a teaching-led versus student-led discussion. There should be a more nuanced discussion about which conditions make teacher-led activities better, and which conditions make student-led activities better. The idea is to be as flexible as possible. To really adapt to what each student needs."**

Dr. Hanna Dumont, Educational Psychologist and Researcher in International Education

**“Because education is preparation for life and work, education has to change. I think one of the most important takeaways is personalization – the ambition to personalize education. Technology can help in doing that.”**

Michael van Wetering, strategic advisor of Innovation at Kennisnet

**Read the Future of the Classroom: *Global Edition***
for insights across all 8 emerging trends

**Digital Responsibility**

**Computational Thinking**

**Collaborative Classrooms**

**Innovating Pedagogy**

**Life Skills & Workforce Preparation**

**Student-led Learning**

**Connecting Guardians & Schools**

**Emerging Technologies**

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