



Future of the Classroom

Emerging Trends in K-12 Education
Japan Edition

Google for Education

Our approach



This report is part of a series on the evolution of K-12 education, mapping 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.

Japan is providing quality education for all



Japan's education system is outperforming most OECD countries, even with a low percentage of GDP being invested in education (3.1%).¹ International assessments confirm high levels of student achievement across all socio-economic levels, showing that social class has a minimal impact on academic results in the country.

The Japanese school system highly prioritizes a holistic model of education, and merges qualified teachers with supportive communities and parents.² Schools are increasingly shifting focus away from memorizing and repeating information to encouraging independent thinking and the sharing of ideas.³

72%
of young people are expected to graduate from tertiary education during their lifetime, ranking Japan 3rd in this area among OECD countries.

OECD (2018)¹

100%
of children aged 5 to 14 are enrolled in education, ranking Japan number one in this area among OECD countries.

OECD (2018)¹

The Japanese classroom at a glance



1883 hours

a year are worked by Japanese teachers in public schools, over 200 hours more than the OECD average.

OECD (2018)⁴



95%

of students in Japan graduate from upper secondary school, ahead of the OECD average of 87%.

OECD (2018)⁵



78.5%

of teachers and school officials in Japan call for an increase in teaching staff to combat overtime work.

Japanese Ministry of Health, Labour, and Welfare (2018)⁶

Key Trends

From our global research, we've analyzed three of the most prominent trends in Japan's K-12 classrooms



Student-led learning

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



Emerging Technologies

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



Innovating Pedagogy

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

“There are several good edtech services already being used in some schools. Seeing these successful cases, other schools are also interested in introducing those educational technology services. But, progress is quite slow in the educational environment, even though technology is changing quite rapidly.”

– Miho Orimo, Principal at Boston Consulting Group, which runs the “Learning Innovation” Project commissioned by the Ministry of Economy, Trade and Industry in Japan

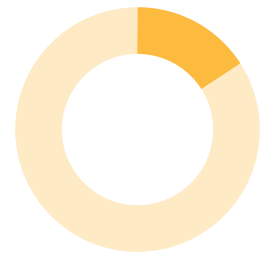


Student-led Learning



Managing one's own learning is considered to be key to future success. In fact, some education leaders argue that "student agency must become the norm, not the exception."⁷ The new curriculum in Japan, which will be implemented from 2020 to 2022, focuses on using active learning strategies to develop 21st Century Skills. It focuses on three pillars: Motivation to learn and apply learning to life; Acquisition of knowledge and technical skills; and Skills to think, make judgements and express oneself.⁹

In a bid to improve student autonomy, Japan has been showing more interest in project-based learning (PBL), where students are given a project to run themselves, and the teacher takes on the role of a coach for support. PBL has been growing as a teaching methodology in Japan, and is regarded by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) as an alternative to more traditional 'passive' learning, based on memorizing information.¹⁰



16%

of Japanese students conduct independent research in class, the lowest number among the four countries included in the research (Japan, the US, China and South Korea).

National Institution for Youth Education (2017)⁸

● Student-led Learning

“With edtech services, the teacher’s role changes from teacher to coach and then teachers can put more focus on students who are behind and can support to develop capabilities of who are ahead. Overall, average class scores also improve.”

– Miho Orimo, Principal at Boston Consulting Group, which runs the “Learning Innovation” Project commissioned by the Ministry of Economy, Trade and Industry in Japan

At the same time, research shows that students are looking for more active learning techniques – 91.2% of Japanese high-school students say that their classes are designed to have students memorize textbook content, while only 16.6% report that their classes require them to conduct independent research, write reports and make presentations. Some 11.9% of respondents add that they partake in group learning and discussions in the classroom.⁸

Another manifestation of active learning is the rise of Sudbury schools in Japan, which give students responsibility over their own education. An example is Nishinomiya Sudbury School, which has no timetables or tests, and where students get involved in school administration.



“We need to consider under which conditions the teacher-led conditions are better and under which conditions the student-led instructions are better. The idea is to be as flexible as possible, and to really adapt to what each student needs.”

– Hanna Dumont, Educational Psychologist and Researcher in International Education



Emerging Technologies



From virtual reality arcades, to robots that keep the elderly company, to androids assistants carrying out menial tasks in the healthcare sector, Japan is a pioneer in embracing technology in everyday life.

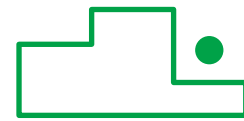
And emerging technologies are also working their way into the classroom to accelerate learning and heighten student engagement. For example, the education ministry in Japan is investing approximately ¥250 million (\$227,000) in rolling out English-speaking robots in 500 Japanese classrooms in 2019. The artificial intelligence (AI) robots are set to improve students' oral and written English skills.¹³



500

classrooms in Japan will see English-speaking robots in 2019.

The Japan Times (2018)



3rd

Japan ranks third globally for the number of published patent findings, only behind the USA and China.

(Intellectual Property Office, 2017)¹²

● Emerging Technologies

Responding to this, schools in Japan are incorporating augmented reality (AR) and virtual reality (VR) in unique ways. The online high school, N High School, gives students the opportunity to be present even if they are geographically far from the classroom. The school has held a virtual ceremony using VR headsets, connecting Tokyo, where the ceremony took place, and Okinawa, where the principal of the school was speaking. The ceremony also made use of AR, allowing pupils to watch from a 360-degree view of the campus. This innovative educational experience aligns with the school's goal to “nurture tech-savvy students.”¹⁴

AI is also being used to help teachers understand the school environment. The city of Otsu is planning to use AI to help teachers predict the seriousness of suspected bullying cases to better understand how bullying occurs and prevent it in the future.¹¹ As Japan is one of the top three countries for patent filing for AI technologies, the country's economy will need a future workforce that can work in an AI-first world.¹²



“I think introducing Google Classrooms, for example, can free up teachers’ time. Teachers are creating hand-made materials. If these were digital, all the materials would be in the cloud and then the teachers would just need to download them and distribute them to students.”

– Miho Orimo, Principal at Boston Consulting Group, which runs the “Learning Innovation” Project commissioned by the Ministry of Economy, Trade and Industry in Japan

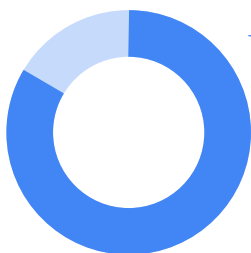


Innovating Pedagogy



In Japan, teachers and officials at primary, junior high, and high schools work an average of more than 11 hours a day, which is raising health concerns across the country. Almost 81% of Japanese teachers and officials add that they experience work-related stress, and 43.4% of this group cite frequency of long work hours as the reason.¹⁶

Freeing up time can have a big impact on teacher engagement and motivation, and can help them move towards news pedagogy and personal development. Technology can be harnessed to achieve this, whether that's for streamlining admin tasks or helping with marking.



80.7%

of Japanese teachers and officials report that they experience work-related stress.

Japanese Ministry of Health, Labour and Welfare (2018)

● Innovating Pedagogy

“There is now a greater focus on the teacher as the change agent, as opposed to the established narrative of them being a scapegoat of poor education system performance in their country.”

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

People’s perceptions of teachers are changing. According to the Global Teacher Status Index, between 2013 and 2018 teacher status in Japan improved the most out of the 21 countries included in the research, rising from 17th to 11th place in those five years. As teachers are increasingly seen as ‘agents of change’, educators are looking for ways to help motivate them and focus on professional development. After all, research shows that there is a positive link between teachers’ status and students’ academic outcomes.¹⁹

One way this is being achieved is through ‘lesson study’. This is a widespread collaboration strategy in which teachers work in groups to prepare a lesson; one teacher then heads the lesson, while the others watch, taking note of student engagement and learning. The final stage involves a discussion of what transpired and strategies for future improvement.¹⁷ Research suggests that lesson study can also be useful during teacher training, but only if there is a highly qualified teacher acting as a mentor and observing the lesson.¹⁸



“The teachers in Japan are quite busy – they tend to work 70, 80 hours per week. That means that they are exhausted and, because of that, even though they are smart and inspiring, they don’t have time to try new things, try new PBLs, try to reskill their teaching skills.”

– Miho Orimo, Principal at Boston Consulting Group, which runs the “Learning Innovation” Project commissioned by the Ministry of Economy, Trade and Industry in Japan



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



**Digital
Responsibility**



**Life Skills & Workforce
Preparation**



**Computational
Thinking**



**Student-led
Learning**



**Collaborative
Classrooms**



**Connecting
Guardians & Schools**



**Innovating
Pedagogy**



**Emerging
Technologies**

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