Project Albus Impact

Indonesia

Taruna Nusantara Senior High School

March 2026

Executive Summary — Project Background & Objectives

Indonesia's Digital 2045 vision highlights the role of technology in strengthening human capital and preparing students with future-ready skills. In support of this ambition, Google for Education launched a project Albus pilot at Taruna Nusantara Senior High School in Central Java – one of Indonesia's most prestigious military boarding schools.

Running from September 2025 to February 2026, the pilot introduced SPC Chromebooks with Chrome Education Upgrade, alongside Google Workspace for Education ("GWfE") Teaching & Learning Edition and AI Pro licenses. The deployment was followed by structured teacher training and coaching in GWfE tools and AI-enabled teaching practices, delivered in Bahasa Indonesian within a secure, centrally managed environment.

The pilot aims to assess improvements in teacher productivity, student-centered teaching and students' 4Cs(*) skills, with success measured through classroom adoption, time saved for teachers, and positive teaching and learning outcomes.

(*) The 4Cs of 21st-century learning: Critical Thinking, Creativity, Collaboration, and Communication

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Project Albus At-a-Glance

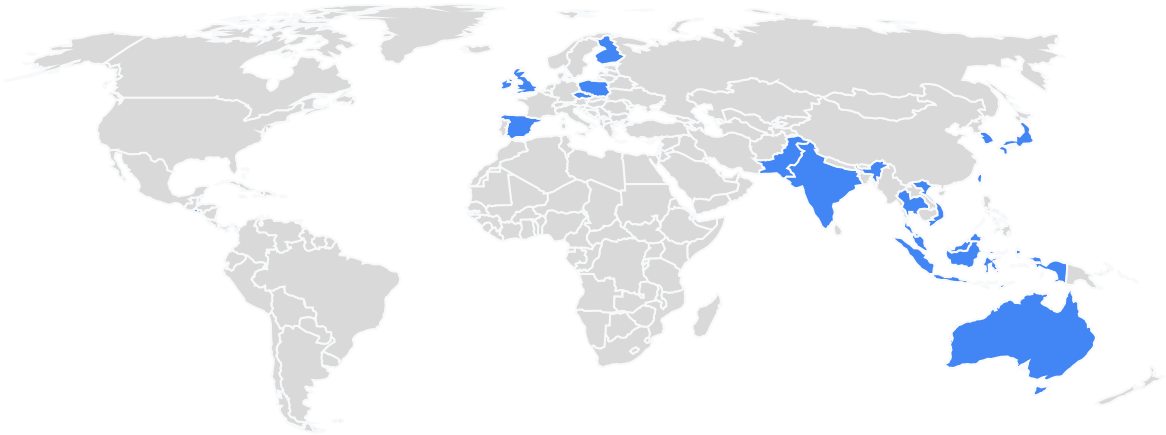
To build evidence on the impact of GWfE tools and Chromebooks in Indonesia, Google for Education, in partnership with Dalberg Advisors, delivered a digital transformation (“DX") of education pilot

What is it?

Project Albus is a global **6-month program** of DX of schools using Chromebooks and Google Solutions.

Albus pilots globally

15	30+
countries	pilots



Components

1. **Chromebooks, Chrome Education Upgrade, Edu Plus and AI Pro Licenses** are provided to participating schools
2. **Professional development** for teachers and IT administrators on Chromebooks, Google Workspace for Education, and AI tools
3. **Pilot case study and data collection with a local academic research partner** to assess implementation and impact

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Participating teachers and students were provided with Chromebooks and Google Workspace for Education tools

Hardware

Model: SPC 14" Ryzen 3 Chromebook (100 devices)
CPU: AMD Ryzen 3 7320C
Memory: LPDDR5 8GB
Storage: M.2 2280 Keey M Type SSD PCI-E NVME 128GB

Software

chromeOS

Chrome Education **Upgrade**

Teaching and Learning add-on

Google AI Pro

Intensive training on Chromebooks, GWfE tools upskilled teachers to integrate technology effectively into their work

40hrs

Of training was delivered by Professional Development Partner – REFO Indonesia

REFO

Training Content	Hours
IT Admin Training	4
Chromebook & GWfE Tools Introduction	10
Education Plus Training	10
Google AI Pro for Education Training (Gemini, NotebookLM)	8
1-on-1 coaching	4
Technical support	4

Certifications

11 teachers have earned **Google Certified Educator (GCE) Level 1** and **Gemini for Educator** certificates

Academic research was conducted to measure the pilot's impact on teaching and learning

Academic research was conducted by [Universitas Ahmad Dahlan]

OBJECTIVE	Assess study participants' experiences to identify benefits, barriers, and areas where innovative technologies support teaching, learning, 4Cs(*) skill development, and student leadership.
PARTICIPANTS	• 114 students and 11 teachers in Pre-pilot data collection • 79 students and 10 teachers in Post-pilot data collection
RESEARCH METHODOLOGY	• Pre- and Post-Pilot Surveys • Classroom Observations and User-Interviews
TIMELINE	September 2025 to February 2026

(*) The 4Cs of 21st-century learning: Critical Thinking, Creativity, Collaboration, and Communication

Our research methodology assesses three key metrics through an overarching impact lens

Attitude and Mindset

- How do teachers and students *feel* about using technology in classrooms?
- Was there a shift in attitudes post training and pilot?

Knowledge

- How comfortable are teachers and students using technology?
- How did this change during the pilot?

Capability and Behavior

- Which tools were most used? Why?
- Which were most effective?
- What challenges were faced while using digital tools?

Impact

- Did student engagement, collaboration, creativity, communication, academic performance increase / decrease?
- What was the impact on teaching (e.g. student-centered teaching, teacher productivity, etc)?

By the end of the pilot, three significant outcomes were achieved across student and teacher participants

Strong adoption of technology by both teachers and students

60% of teachers reported having no challenges in using technology to manage instruction post-pilot (up from 0% pre-pilot).

Additionally, 70% of teachers now use technology for more than 5 hours per week.

Enhanced teachers productivity and ability to provide student-centered learning

Teachers saved an average of 7 hours per week on administrative tasks like lesson planning and grading.

100% of teachers reported a shift toward a more student-centered teaching approach, allowing them to act more as facilitators

Greater student engagement, creativity, collaboration, and academic performance

90% of teachers observed improvements in student ownership, ability to express themselves, and overall performance.

70% of students reported becoming more engaged in their classes due to the interactive nature of the new tools.

Strong Adoption of Technology in Teaching & Learning

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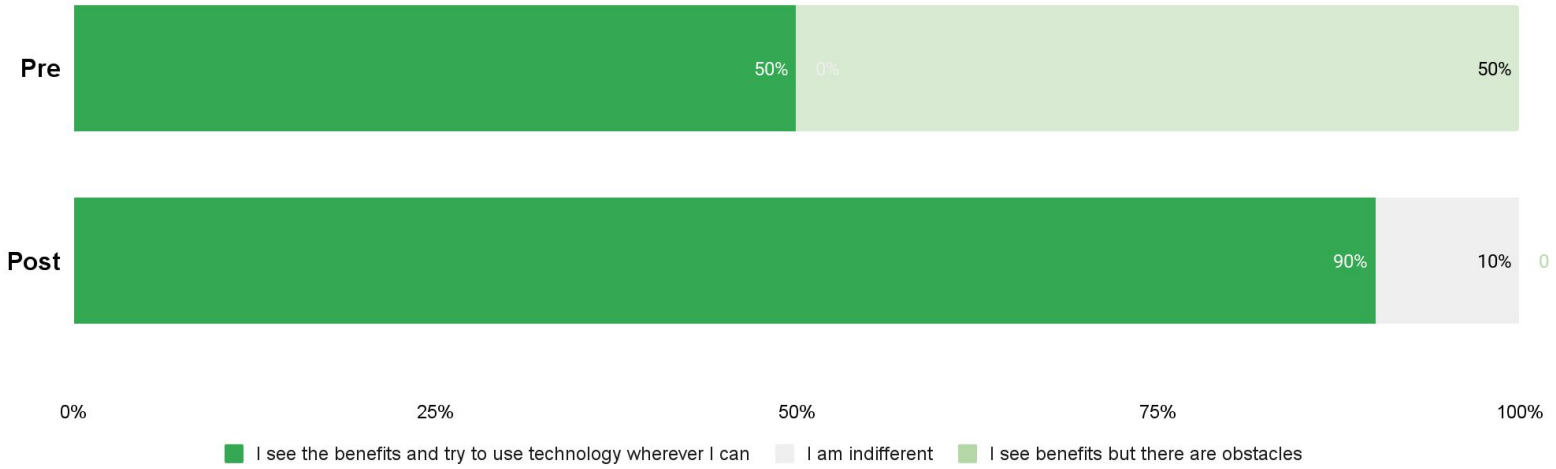
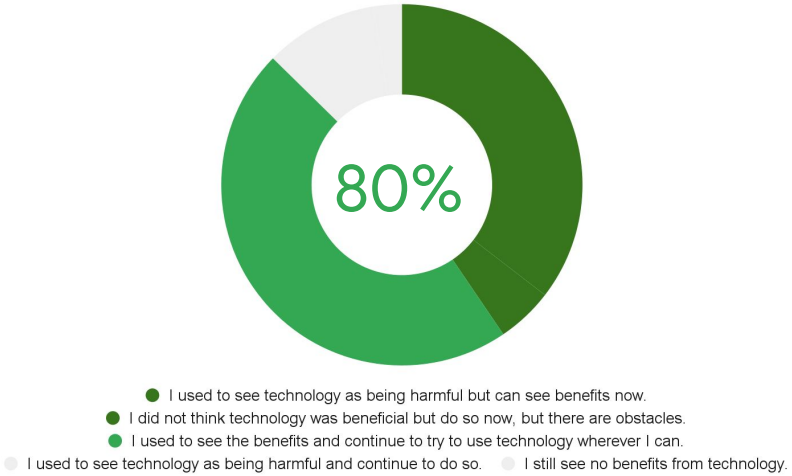
90% of teachers saw the value of technology and actively incorporated it into their classrooms



Q: What is your attitude towards the use of AI and technology in classrooms? (n-pre =11, n-post =10)

Similarly, 80% of students recognized the benefits of using technology in the classroom



Q: Has your attitude towards the use of technology in classrooms shifted after the pilot? (n=79)

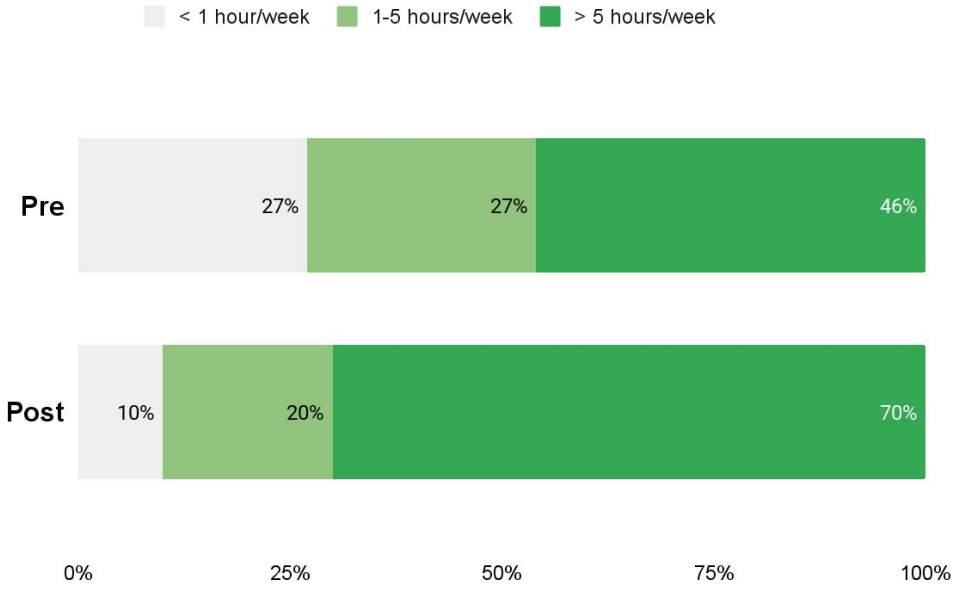
> “[The class] is extremely enjoyable when we focused on the material from the teacher and making the class interactive.”
> **– Student**

> With a Chromebook, I get additional facilities especially for learning because it can be carried anywhere and used effectively during study time.
> **– Student**

Teachers spent substantially more time using technology per week than before the pilot

70%

of teachers now use technology more than 5 hours/week in their classes



Q: How much time do you spend per week using technology in your classroom? (n-pre =11, n-post =10)

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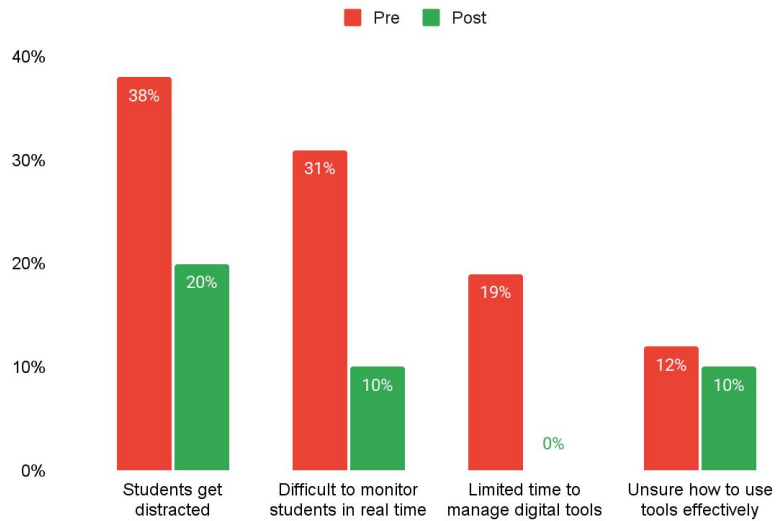
By the end of the pilot, a majority of teachers had no difficulty in using technology to manage classrooms

60%

of teachers reported they no longer having challenges in using technology to manage or enhance classroom instruction

Teachers reported a significant decrease in most classroom challenges from Pre- to Post-pilot.



Q: Which of the following challenges have you faced when trying to use technology to manage or enhance classroom instruction? (n-pre =11, n-post =10)

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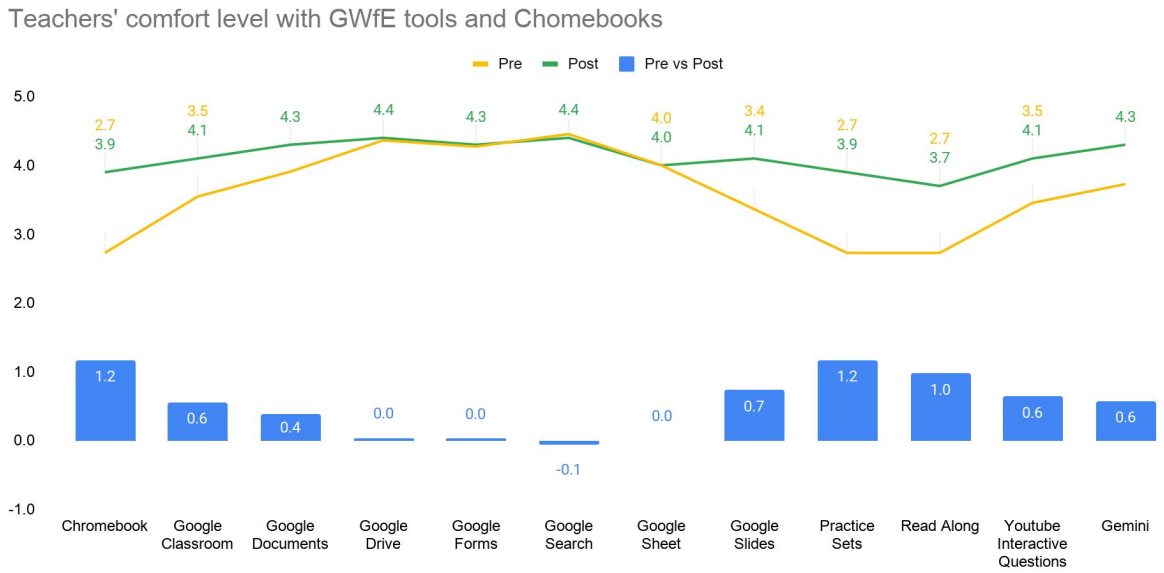
Teachers’ comfort level with GWfE tools & Chromebooks improved significantly



Q: How comfortable are you using [tool]? (n-pre =11, n-post =10)

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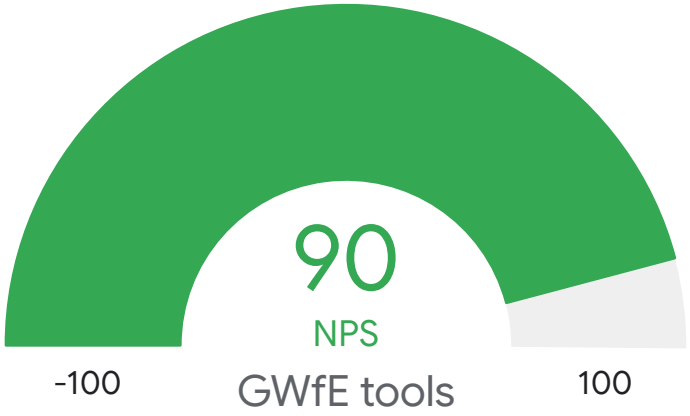
GWfE tools were strongly endorsed by teachers (NPS(*) > 70)



> Google Workspace for Education is easy to use, supports collaboration, and effectively enhances digital and student-centered learning in the classroom."
>
> **– Teacher, Religion and Culture**

Q: On scale of 1-10, how likely are you to recommend [tool]? (n=10)

(*): NPS = %Promoter - % Detractors
NPS > 70 is considered "excellent" or "world-class"

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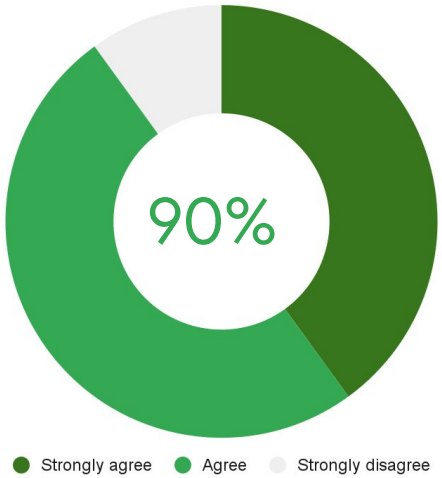
90% of teachers agreed that Chromebooks were well-suited for their students



Q: Please provide your opinion on the following statements - compare your experience before pilot and during pilot. [Chromebooks are well suited to my students.] (n=10)

> Chromebooks are very suitable for my students because they are easy to use, support digital and collaborative learning, and help students access materials, read, and complete assignments independently and in a structured way
> **– Teacher, Religion and Culture**

> With certain access restrictions on Chromebooks, teachers can deliver lessons more effectively without needing to give many instructions or repeatedly remind students (simply by setting the focus through the classroom tool).
> **– Teacher, Science**

Enhanced Teacher Productivity and Ability to Provide Student-Centered Learning

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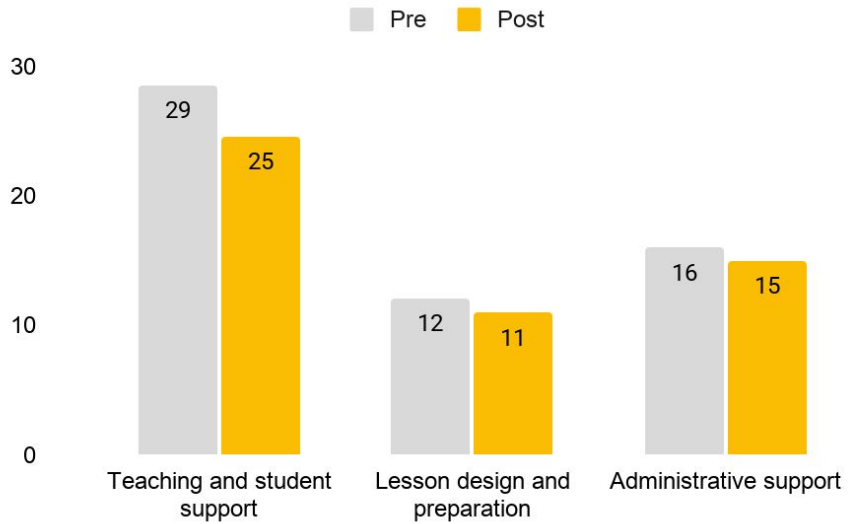
Teachers' weekly working hours were reduced to align more closely with the OECD global average

5hrs

Of working time per week were reduced after integrating technology



Q: How many hours/ week do you spend on [task]?
(n-pre =11, n-post =10)

Reference: OECD global average of 46 hours/ week

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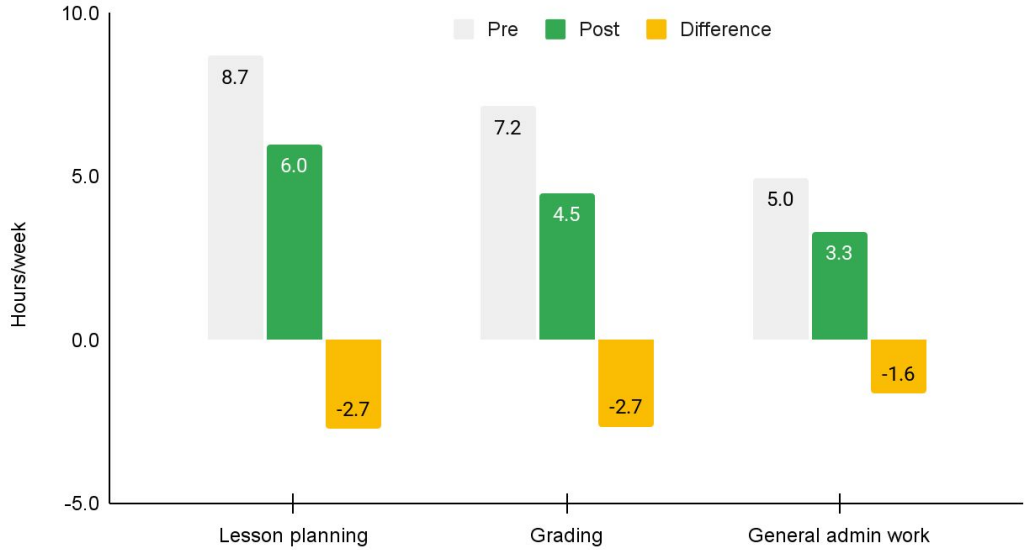
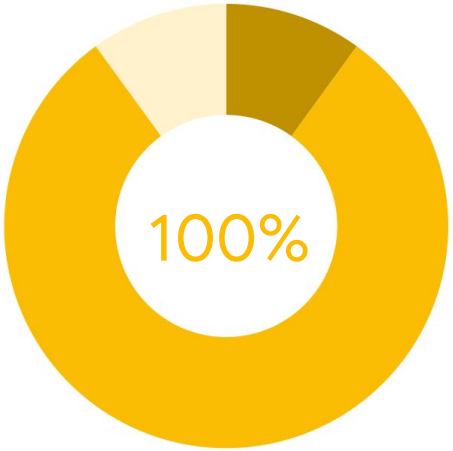
Notably, teachers saved a total of 7 hours/week on time-consuming tasks like Lesson Planning, Grading and Admin



Q: How many hours/ week do you spend on [task]? (n-pre =11, n-post =10)

100% of teachers agreed that GWfE Tools saved their time



A lot of time is saved (5+ hours per week). Significant time is saved (1-5 hours per week).
A small amount of time is saved (<1 hour per week).

> Google Workspace greatly helps teachers save time, especially when facilitating discussions and managing student assignments."
> – Teacher, Science

Q: Overall, do Google Solutions (GS) save you time in some of your key activities? (n=10)

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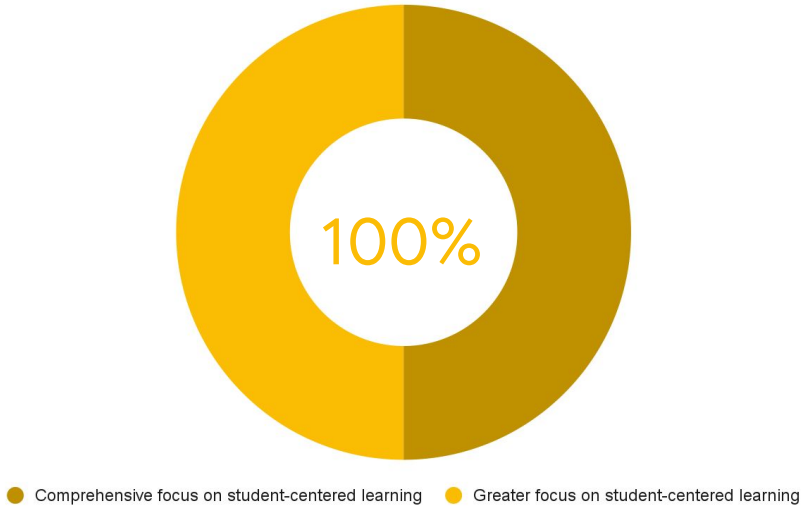
100% of teachers acknowledged the shift towards a more student-centered teaching approach

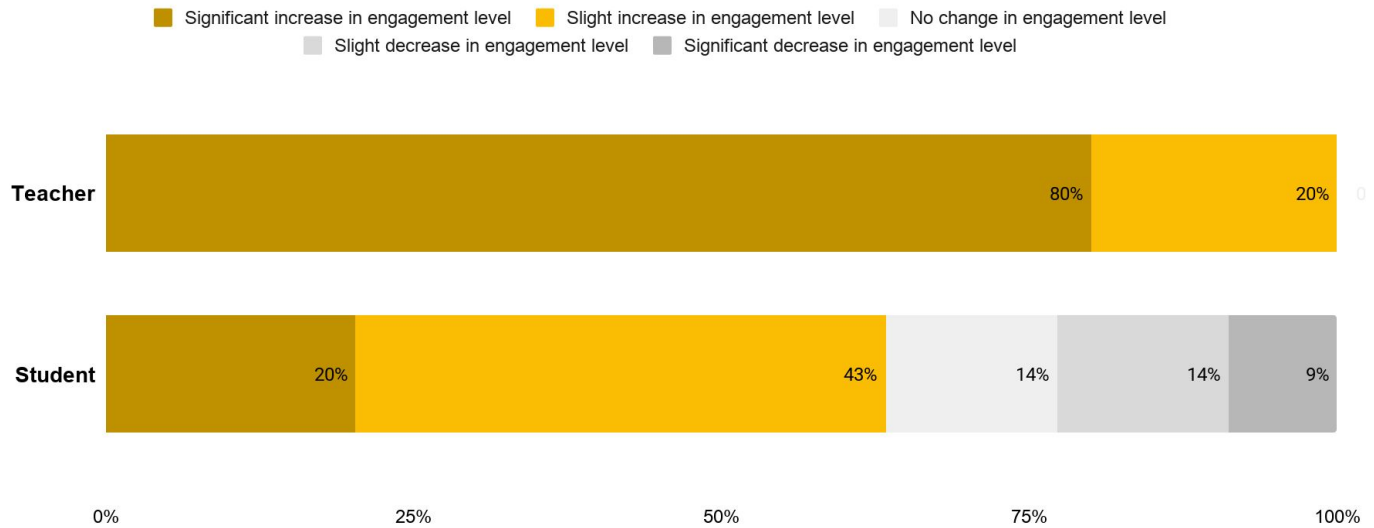


Q: To what extent did your focus on student-centered learning change during the pilot? (n=10)

> “Throughout the training phase, I took on more of a facilitator role.”
>
> **– Teacher, Science**

> “Students were given greater space to read independently, engage in discussions, ask questions, and explore their understanding with the support of digital tools and AI.”
>
> **– Teacher, Religion and Culture**

As a result, 100% of teachers and 63% of students reported increased student engagement level in the classrooms



Q: To what extent did your student engagement change during the pilot? (n=10)

Q: To what extent did your engagement change during the pilot? (n=79)

Greater Student Learning Experience and Academic Performance

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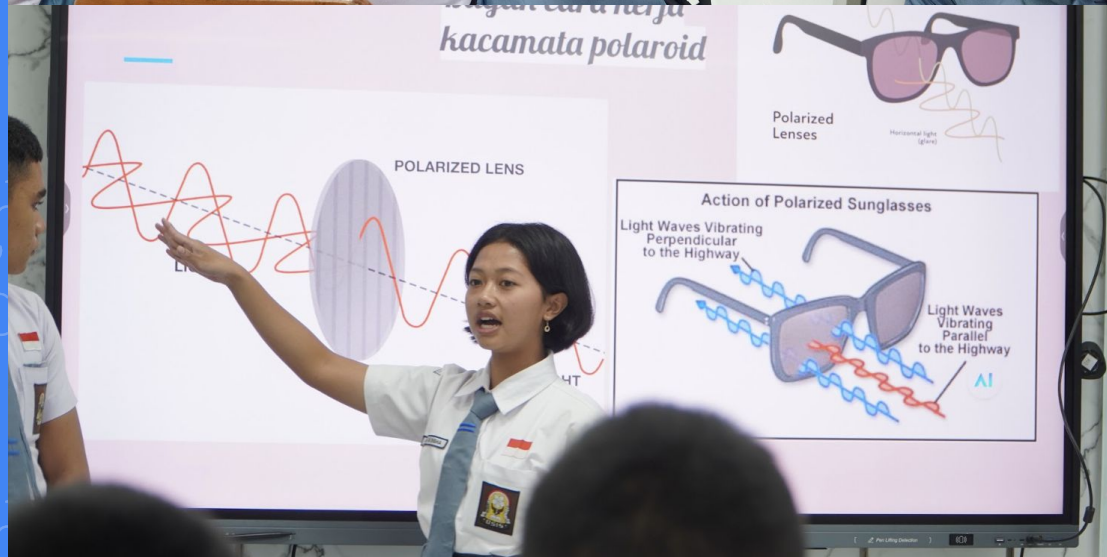
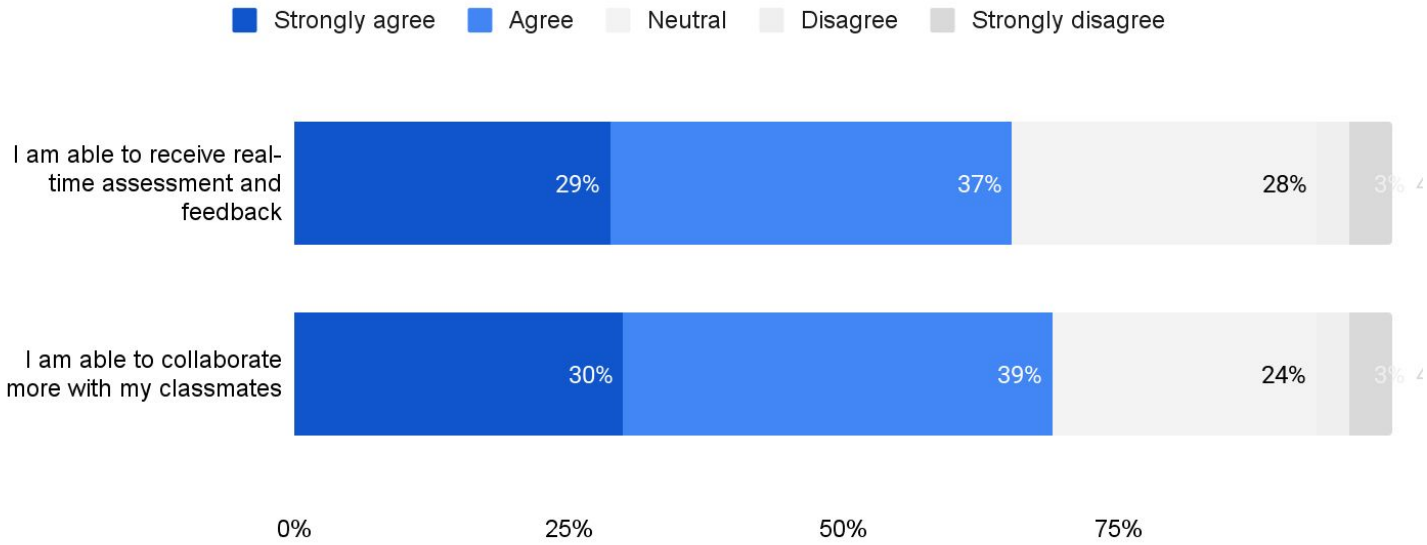


Almost 70% of student experienced real-time feedback and stronger collaboration with their peers



Q: Please provide your opinion on the following statements - compare your experience before pilot and during pilot (n=79)

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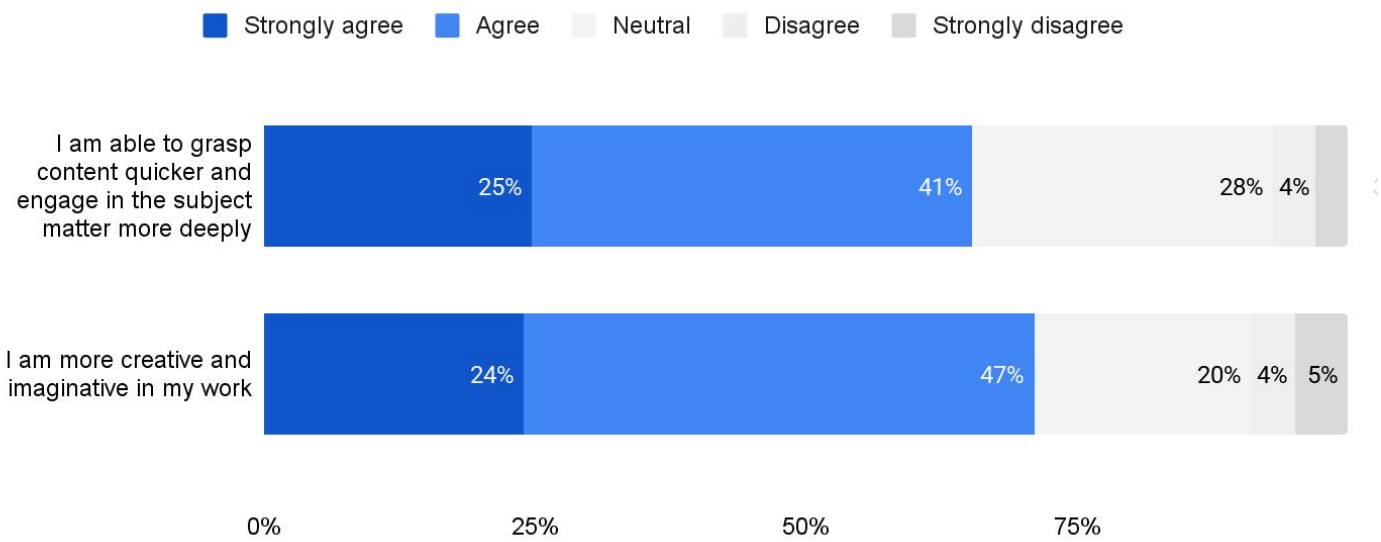
Around 70% also experienced deeper engagement and increased creativity through the pilot

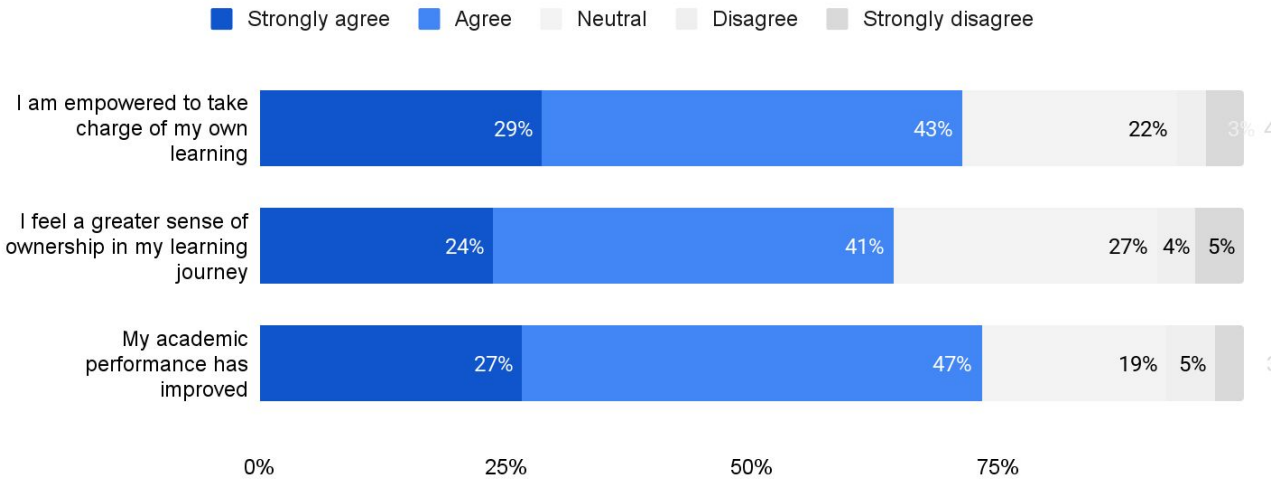


Q: Please provide your opinion on the following statements - compare your experience before pilot and during pilot (n=79)

Collectively, these changes drove increased student ownership and improved academic results

74%

Of students reported improvements in their academic performance



Q: Please provide your opinion on the following statements - compare your experience before pilot and during pilot (n=79)

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“Learning feels more modern and less monotonous.”
– Student

“Many new features or applications improved the quality of learning.”
– Student

Q: On a scale of 1-5, how would you describe changes to your classroom experience during pilot? Explain your choice in a few words (n=79)

Obstacles

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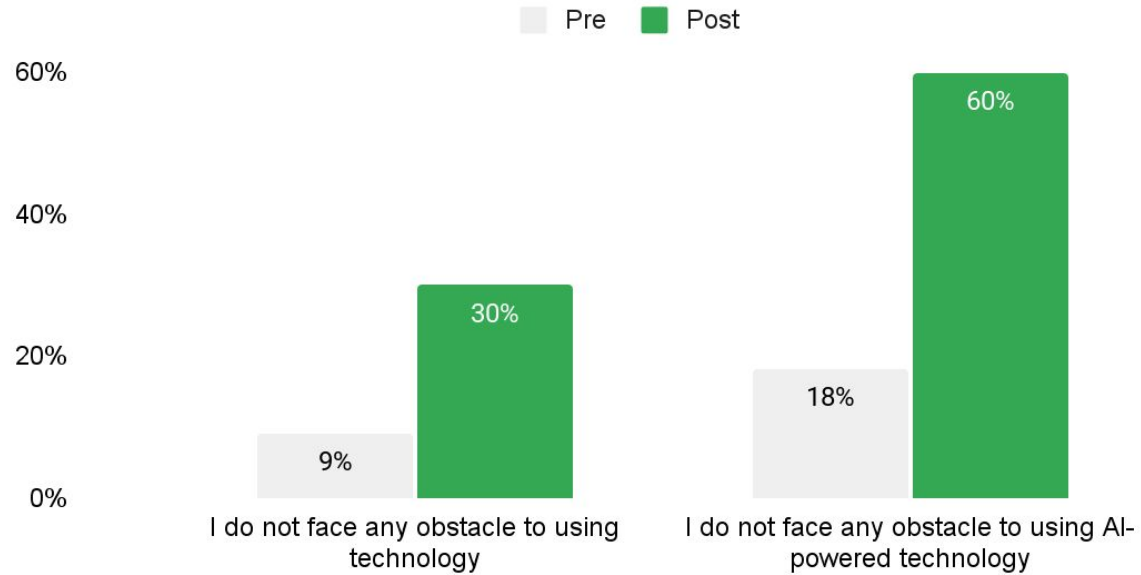
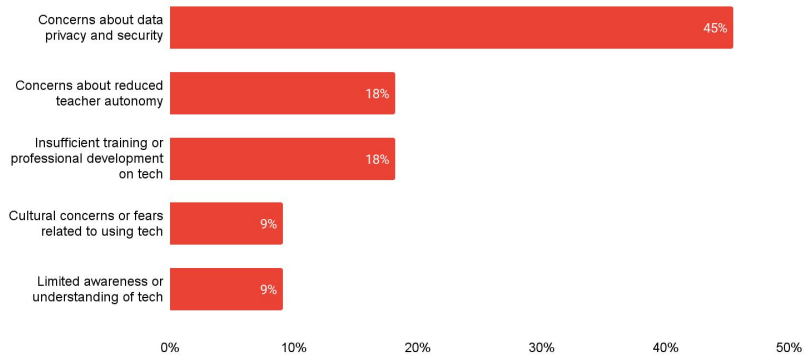
While greater numbers of teachers reported no obstacles to using technology and AI-powered tools ...



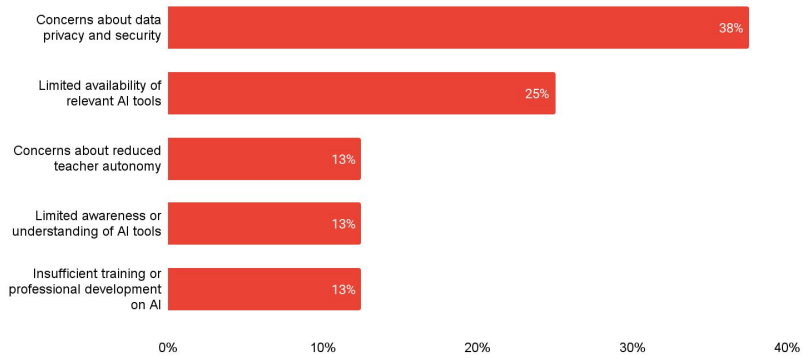
Q: Do/Did you face any of the following obstacle(s) in using technology in the classroom? (n-pre =11, n-post =10)

Q: Do/ Did you face any of the following obstacle(s) to using AI-powered technology in the classroom during the pilot? (n-pre =11, n-post =10)

… data privacy and security stands out as the primary concern in integrating technology and AI tools



Q: Did you face any of the following obstacle(s) in using technology in the classroom? (n=10)



Q: Did you face any of the following obstacle(s) to using AI-powered technology in the classroom during the pilot? (n=10)

Regarding project operations, additional resources are needed to maximize the use of Chromebooks and GWfE tools

Connectivity

Unstable or restricted Wifi limited access to digital platforms and disrupted lesson flow.

Enhanced Classroom Monitoring Capability

Teachers emphasized the importance of having monitoring and supervision tools (*e.g., digital monitoring and assessment systems*) to ensure effective classroom management.

Usability & Teacher Readiness

Differences in teachers' digital skills affected adoption, indicating a need for further training and support.

Source: Teacher Post-Survey (n=10; Teacher Focus-Group Interviews

Project Albus Indonesia

Thank you!