

Project Albus

Impact on Teaching and Learning

April 2024

Project Albus

Overview

Project Albus aims to accelerate digital transformation in schools

Digital Transformation

High profile DX of a selection of pilot schools in partnership with government and other stakeholders, observed by leading academics

Insight

Generate deep insights into how schools adopt technology within the local cultural, political and economic context

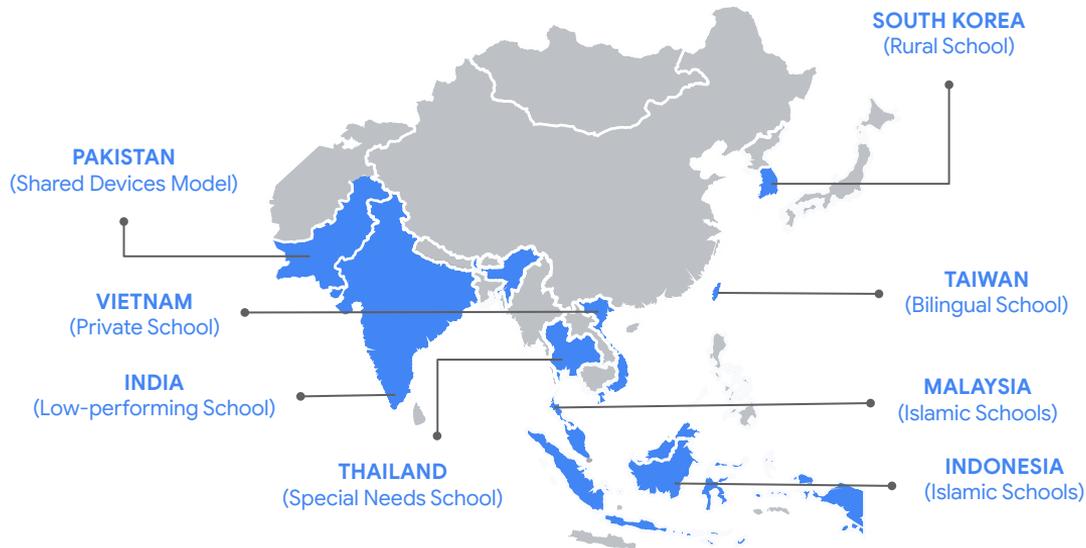


Impact

Improve understanding and stimulate demand for our value proposition amongst stakeholders in the education system

Pilots were conducted in diverse settings across South and Southeast Asian markets

Albus pilot countries (as of Dec 2023)

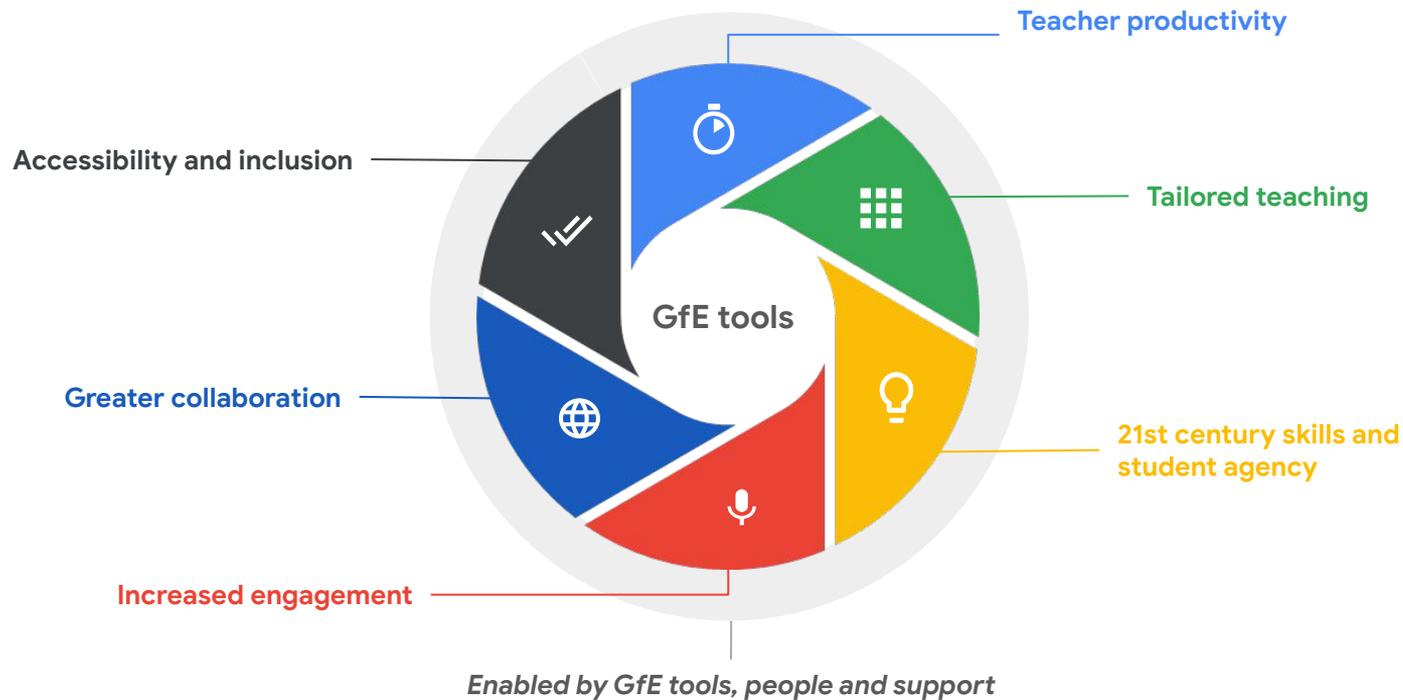


Data snapshot¹

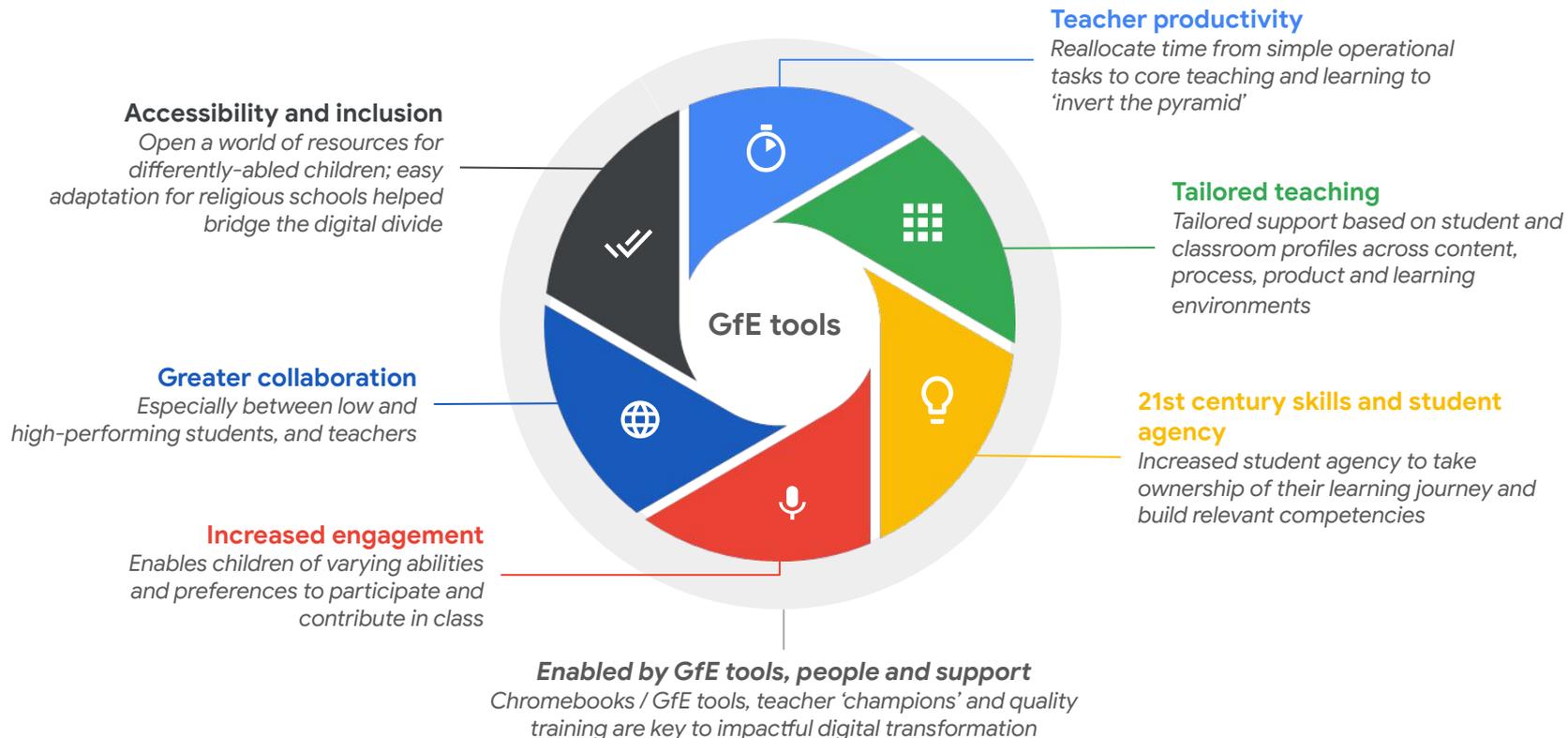


Note: (1) Data snapshot and subsequent analyses is based on number of survey respondents. Actual direct impact of pilots was on a greater number of students who may not have access to or completed surveys.

GfE transformed how teachers and students learn and teach



GfE transformed how teachers and students learn and teach



Key highlights

Accelerating digital transformation in education

*Data as of Dec 2023



8

countries

21

schools

250+

teachers

990+

students

GfE solutions have transformed how teachers and students learn and teach¹



>75%

Of teachers reported **greater and deeper student engagement** in classrooms



>70%

Of students were able to **find knowledge independently and were more creative**



60-80%

Of teachers and students reported **closer communication and collaboration**



>70%

Of teachers were **able to provide tailored support** based on students' needs, abilities, and performance

(Examples across i) learning environment, ii) content, iii) product, and iv) process)



70%

Of teachers **across varied school settings** (e.g. religious schools, students with hearing impairments) **and countries** agreed that **students perform better** with GfE and CB



1-5h

Average time saved per week during the pilots



Reallocated time to core teaching and student support

Project Albus

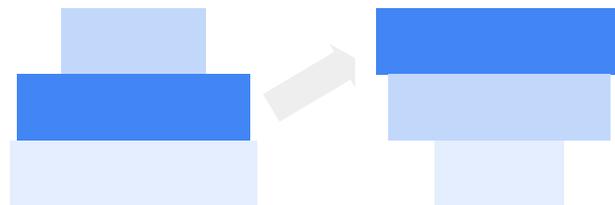
Detailed Findings

GfE enabled teachers to not only save time, but reallocate it effectively

 **1-5 hours per week**
Of time saved by teachers



Optimal distribution of saved time



Legend

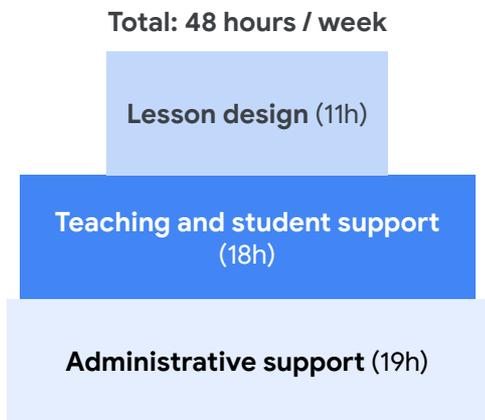
-  Teaching and student support (most important)
-  Lesson design (somewhat important)
-  Administrative support (least important)

Teachers reallocated time effectively to ‘invert the pyramid’

Time spent on each task by teachers

Pre-pilot^{1,2}

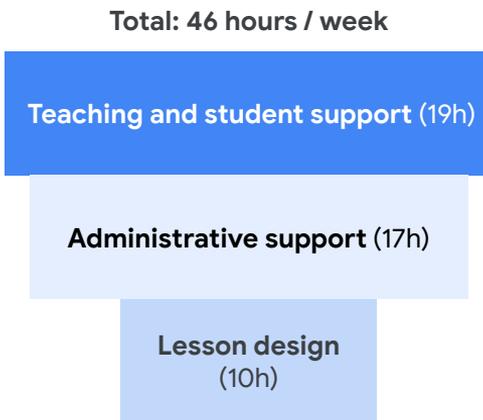
Hours/week, n=68 (6 schools), 2021-23



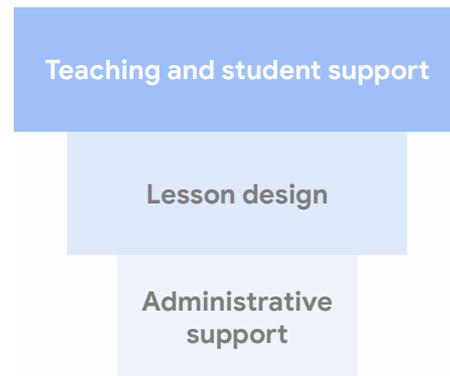
Time spent on each task by teachers

Post-pilot^{1,2}

Hours/week, n=58 (6 schools), 2021-23



Ideal scenario



Teachers not only saved time; but also redistributed it towards important teaching and learning activities

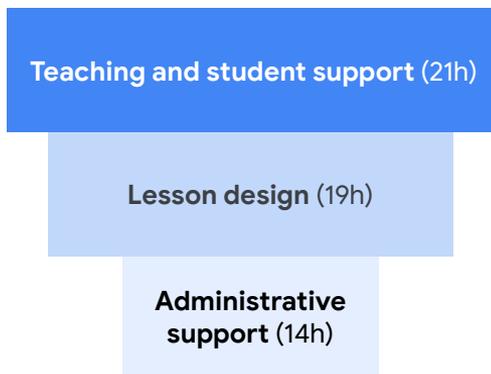
Sources: (1) Raw data from Albus pilot surveys. Question asked in survey was: “How much time do you currently spend per full working week on each activity?”; Dalberg Analysis; Difference in the number of responses pre- vs. post-pilot was due to post-pilot data unavailability for one pilot. (2) South Korea was selected as a case study given the country’s leading role in integrating AI into education - “world’s first digital textbook and AI tutoring for public education system” Source: “Minister turns to AI classes to cool competition in education.” The Korea Herald (2023)



In Thailand, the pyramid was already ‘ideal’ shaped, but teachers still managed to save time and reallocate effectively

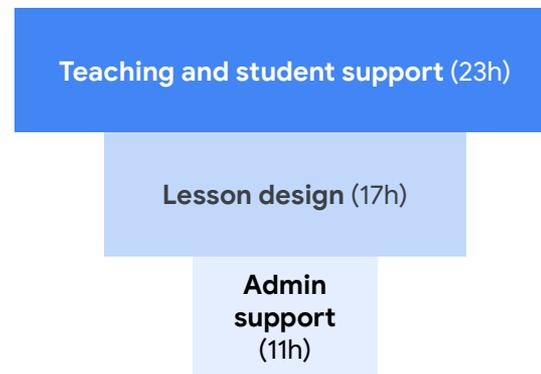
Time spent on each task by teachers, Pre-pilot¹
Hours/week, n=87, 2021-23

Total: 54 hours / week



Time spent on each task by teachers, Post-pilot¹
Hours/week, n=23, 2021-23

Total: 50 hours / week



Note: (1) Difference in the number of responses pre- vs. post-pilot was due to post-pilot data unavailability.
Sources: (1) Raw data from Albus pilot surveys. Question asked in survey was: "How much time do you currently spend per full working week on each activity?"; Dalberg Analysis

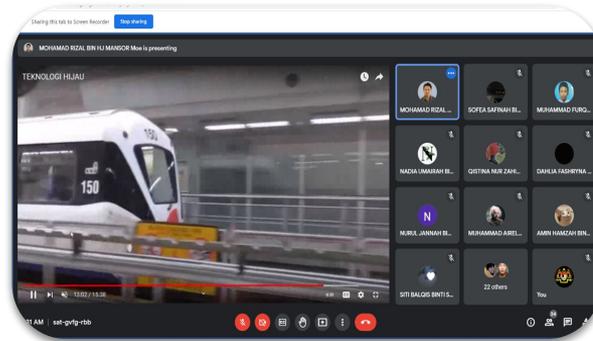
Case study: Teacher journeys (1 / 2)



Lesson design tasks | Design lesson plan and content

“We can [immediately] **find unlimited sources from the internet**. Then we can share with the students. It is so **convenient**. Before, we have to fully depend on reference books and exercise books.”

Teacher, SMK Jalan Empat School, Malaysia¹



Lesson design tasks | Assessments

“Before the pilot, I spent a lot of time printing and distributing tests, which makes assessing the students time-consuming....**Now, I assess them twice a week [digitally]** and can **keep up with their progress** and communicate with the parents.”

Teacher, FPT School, Vietnam²



Note: Photos are illustrative and may not directly map to teacher quotes.

Sources: (1) “Project Albus - Building 21st Century Classrooms.” Universiti Kebangsaan Malaysia, (2023); (2) Raw Data from Albus pilot surveys in Vietnam; Photos based on those taken by partners during the pilots.

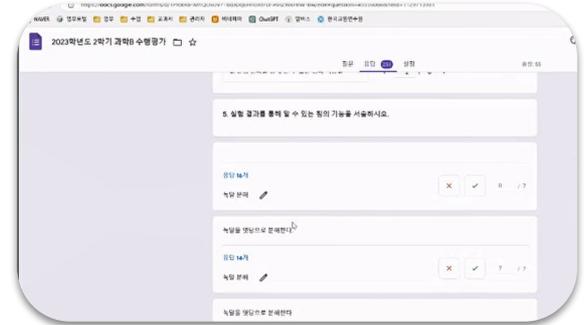
Case study: Teacher journeys (2 / 2)



Administrative support | Grading / Marking

“Previously, I had to grade every student individually. The itemized grading feature [of Google Forms] was very helpful, convenient and efficient because **I can check and grade responses by clusters.**”

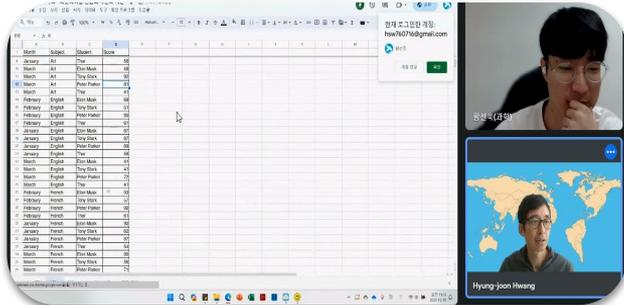
Teacher, Jeongwan Middle School, South Korea¹



Administrative support | Data collection

“We have a lot of administrative work to do in the school, such as collecting opinions from various surveys. **Unlike before, we can just send a link and they add the data through Google Sheets.**”

Teacher, Jeongwan Middle School, South Korea¹



Note: Photos are illustrative and may not directly map to teacher quotes.

Sources: (1) “A Study on Evaluation of the Effectiveness of Using Google for Education.” Seoul National University, (2023); Photos based on those taken by partners during the pilots.

GfE allows teachers to tailor education to student's unique needs

 **>70%**

Of teachers were **able to provide tailored support** based on students' needs, abilities, and performance

Learning environment

E.g. virtual museum trips, taking learning outdoors

Content

E.g. escape room activity to learn about heat

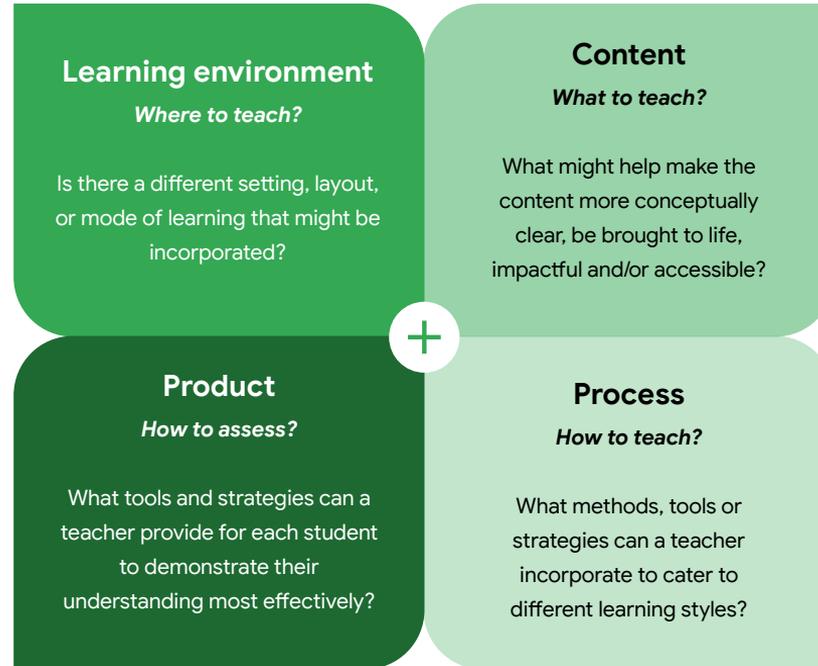
Process

E.g., Google Earth to teach Math concepts

Product

E.g., voice recordings to submit assignments

GfE unlocked four dimensions of customization



Sources: "[Differentiating learning](#)," New South Wales Government, (2024).



Teachers were able to differentiate needs and provide targeted feedback

Survey respondents (teachers) that agreed or strongly agreed to the following statements

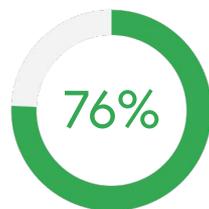
n=252 (14 schools); 2021-23



My **ability to differentiate for specific students' needs** has improved.¹

"[I was able to] **generate more descriptive** information and **attach graphic files** and video clips [to cater to learning needs of different students]"

Teacher, Rittiyawannalai School, Thailand²



I gained a **better understanding of individual students' capabilities** with GS.¹

"GS tools were helpful in allowing me to keep a **record of students and assess them individually.**"

Teacher, FPT School, Vietnam³



I was able to **provide more meaningful feedback to students** on their work.¹

"You can **comment**, and you can **write a solution in a video**, which is very helpful in providing feedback in that respect."

Teacher, SNU Girls' School, South Korea⁴



Sources: (1) Raw Data from Albus pilot surveys, Dalberg Analysis; (2) "Google Solutions for Education in Thailand: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks." Chulalongkorn University, (2021); (3) Raw Data from Albus pilot surveys in Vietnam; (4) "A Study on Evaluation of the Effectiveness of Using Google for Education." Seoul National University, (2023).

Case study: GfE enabled teachers to design unique learning environments (1 / 4)



"[Google tools eliminated] the need to arrange physical activities outside the school, **virtual tours** have greatly helped in this regard (**digital field trips**), which also [save] cost."

Teacher, Islamabad Model College for Girls, Pakistan¹



"With Chromebook and Google Workspace, **I can teach from anywhere.**"

Agriculture teacher (Rittiyawannalai School) teaching from the fields to give students a live insight into the subject matter during Covid lockdown²



Students at Holston Middle School (South Korea) used their Chromebook cameras to shoot flowers and **learn about plants in the schoolyard.**³



Note: Photos are illustrative and may not directly map to quote.

Sources: (1) "Accelerating Teacher's Learning & Teaching Experience through Google Solutions in the Classrooms of Pakistan," Shafiq et al., (2023); (2) "Google Solutions for Education in Thailand: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks," Chulalongkorn University, (2021); (3) "A Study on Evaluation of the Effectiveness of Using Smart Devices for Teaching and Learning," Seoul National University, (2023); Photos based on those taken by partners during the pilots.

Case study: GfE enabled teachers to tailor **content** more closely to the subject matter and class dynamics (2 / 4)



“Material wise, we used to use textbooks only, now we **use varied internet sources to prepare lecture**. This helps us to prepare an authentic lecture that is **full of rich content from different sources**, since my subject demands variety.”

Teacher, Islamabad Model College for Girls, Pakistan¹



“I **designed an escape room game** around the unit 'Heat and Our Lives' and **used generative AI to develop the scenarios**. The students had a lot of fun and I uploaded it to the science teacher community, where it received a lot of attention.”

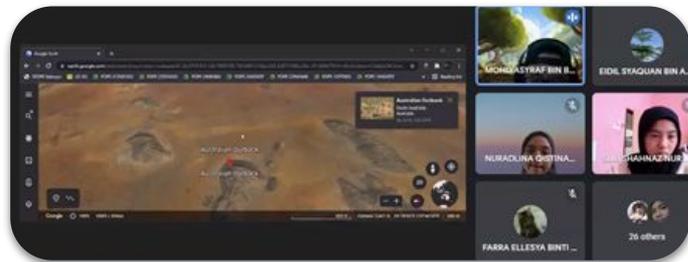
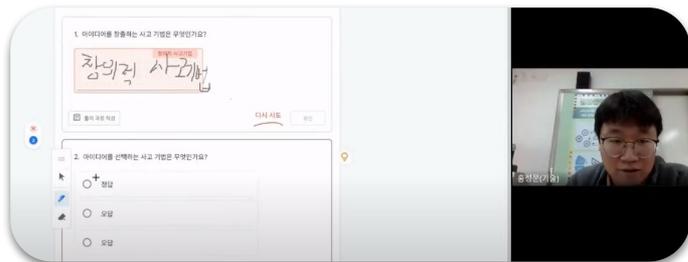
Teacher, Jeongwan Middle School, South Korea²



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Case study: GfE enabled teachers to customize the **process / instructions** to the learning needs of their students (3 / 4)



“Previously, it was difficult to understand students' understanding by looking at their reactions in class, but with Google Docs, **I can see what they are doing, so I can teach them according to their level.**”

Teacher, Jeongwan Middle School, South Korea¹



“I use Google Earth to provide **visual descriptions for the students to understand the hill slopes** in one Math chapter which is easy.”

Teacher, SMK Jalan Empat, Malaysia²



Note: Photos are illustrative and may not directly map to quote.

Sources: (1) “A Study on Evaluation of the Effectiveness of Using Google for Education.” Seoul National University, (2023); (2) “Project Albus - Building 21st Century Classrooms.” Universiti Kebangsaan Malaysia, (2023); Photos based on those taken by partners during the pilots.

Case study: GfE enabled teachers to allow students to display mastery of subject through **diverse product outputs** (4 / 4)



Students wrote Thai poetry on Canva

Hi my name is Romchalee thaneeto my nick name is Chicha I m in class 2/16 number 39

Based on your favorite movie survey using Google Form.
All 34 men, 16 boys, 16 girls.

- The movie that people like the most is **Avengers endgame** by a total of 19 male votes, representing 38%.
- 2nd place is **Nevertheless**, 7 people voted, 6 female 1 male representing 21 %.
- The third is **Little Mermaid**, all 6 votes, 4 female , 2 male , representing 18 %.
- 4th place is **Titanio**, 5 voters, 4 Females, 1 male, representing 15 %.
- 5th place is **The untamed** , 3 voting byfemale , representing 9 %.

Students submitted "Voice Typing" exercises to practice pronunciation

Sample student outputs for various assignments (Rittiyawannalai School, Thailand)¹



Students used Jamboard to demonstrate their understanding of lungs



Students created online videos to accompany presentations on Google Slides

Sources: (1) "Google Solutions for Education in Thailand: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks (Interim Report)," Chulalongkorn University, (2021); Photos based on those taken by partners during the pilots.

Students using GfE demonstrated 21st century skills and agency across different subjects and pilot schools

Building 21st century skills and student agency

 **>70%**

Of students were able to **find knowledge independently and were more creative**

Across different subjects

Mathematics

Language

Music and Arts

Design & Technology

Ethics

Across different schools and countries



FPT School in Vietnam



Rittiyawannalai School in Thailand



SNU Girls' Middle School in South Korea



SMK Jalan Empat School in Malaysia

Teachers consistently noted greater creativity and students benefit from self-directed learning

Survey respondents (teachers) that agreed or strongly agreed to the following statements
n=252 (14 schools); 2021-23

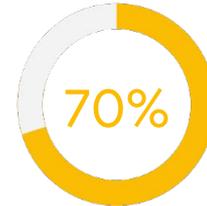


Students are able to **express their ideas and thoughts better**.¹



Students become **more creative and imaginative** in their work.¹

Survey respondents (students) that agreed or strongly agreed to the following statements
n=997 (14 pilot schools); 2021-23



Students are able to **find related knowledge and information** for learning.¹

In Thailand, students were tested bi-weekly for 21st century skills during the pilot and demonstrated **consistent upwards trajectory in “Creativity, Communication, Collaboration”**.

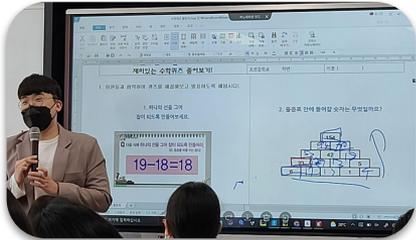
Rittiyawannalai School, Thailand²



Sources: (1) Raw Data from Albus pilot surveys, Dalberg Analysis; (2) “Google Solutions for Education in Thailand: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks.” Chulalongkorn University, (2021).

Case study: Students were more proactive in seeking knowledge, contributing to student-centered learning

Mathematics



“Students can **directly explore data**. Self-directed learning is suitable for the education of future generations.”

Teacher, SNU Girls’ Middle School, South Korea¹



Language



“I learned how to look for information. **If there is a word I don’t know, instead of asking my friends, I’ll look it up.**”

Student, FPT School, Vietnam²



Music and Arts



“Through Google Arts and Culture, I **created music myself** which helped me find out more easily what kind of sound is made.”

Student, SNU Girls’ Middle School, South Korea¹



Note: Photos are illustrative and may not directly map to quotes.

Sources: (1) “A Study on Evaluation of the Effectiveness of Using Google for Education.” Seoul National University, (2023); (2) Raw Data from Albus pilot surveys in Vietnam; Photos based on those taken by partners during the pilots.

Case study: GfE promote 21st century skills across different subjects

Language



"Before, the students could only discuss verbally... **With Google Slides**, however, they can **present on the slides with photos to demonstrate and attract attention.**"

Teacher, FPT School, Vietnam¹



Design & Technology



"They would use...put all sorts of things in the slide to make it interesting. Sometimes **they would put videos.** It's really interesting to see the students get so creative."

Teacher, SMK Jalan Empat School, Malaysia²



Ethics



"When doing Ethics homework, it was nice to **share research with each other**... Even my friends, who don't participate much... **searched more actively** when researching data."

Student, SNU Girls' Middle School, Korea³



Note: Photos are illustrative and may not directly map to quotes.

Sources: (1) Raw Data from Albus pilot surveys in Vietnam; (2) "Project Albus - Building 21st Century Classrooms." Universiti Kebangsaan Malaysia, (2023); (3) "A Study on Evaluation of the Effectiveness of Using Google for Education." Seoul National University, (2023); Photos based on those taken by partners during the pilots.

GfE enabled students of all abilities to be better engaged in class

 **>75%** of teachers reported **greater and deeper student engagement** in classrooms

E.g. **Teachers assign homework / test via games**



E.g. **Virtual modes of collaboration** provide additional avenue for **students** to contribute



Teachers used advanced features to deepen student engagement in their learning journey

Survey respondents (teachers) that agreed or strongly agreed to the following statements

n=252 (14 schools); 2021-23



Students are **more engaged and active** in general.¹



Students **engage more deeply** in the subject matter.¹



“I like the teacher to test us with the app, Kahoot. It is **just like playing game. You do not feel that it is in class** and doing the test... The lessons are more fun.”

Student, Renhe Junior High School, Taiwan²



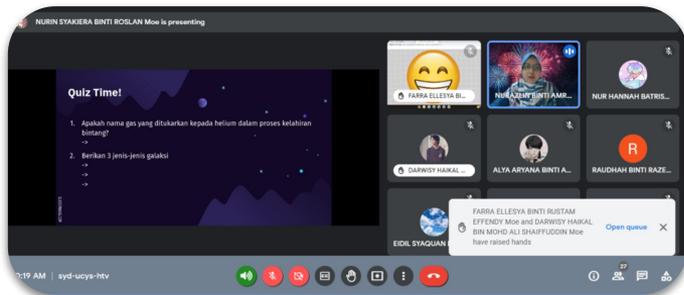
“GS helps students to **understand the lessons better** and offers them the opportunity to **design their own lessons.**”

Teacher, Vinschool Golden River, Vietnam³



Sources: (1) Raw Data from Albus pilot surveys, Dalberg Analysis; (2) “Technology Enhancing Bilingual Instruction: A Pilot Study of a Junior High School with Google Solution.” National Taiwan Normal University, (2022); (3) “Google Solutions in Vietnam: How Technology Transforms Teaching and Learning.” Vietnam National Institute of Educational Sciences, (2023).

Case study: GfE enabled students of different abilities in Malaysia to participate and contribute in class



“[When using **Google Meet**], students can simply **raise their [virtual] hands** without turning the microphone on to show participation [...] it **encourages shy students to participate.**”

“The [**raise hand**] feature really helps teachers to **encourage students to interact** and manage classroom better.”

“When teachers use **Jamboard**, [**shy**] students who take time to **even get up from their seats** in face-to-face classes **get to put their own points on the board** without teachers calling them.”

Teacher, SMK Jalan Empat School, Malaysia¹

Note: Photos are illustrative and may not directly map to quotes.

Sources: (1) “Project Albus - Building 21st Century Classrooms.” Universiti Kebangsaan Malaysia, (2023); Photos based on those taken by partners during the pilots.

GfE created a conducive environment to facilitate classroom discussions and teacher collaboration

 **60-80%** of teachers and students reported **closer communication and collaboration**

Teachers

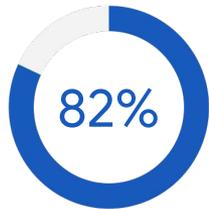
- Created groups based activities
- Collaborative assignments
- Group feedback
- Efficient peer (and other stakeholder) collaboration

Students

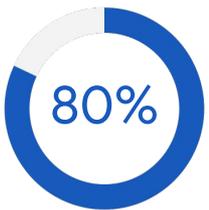
- Leverage GfE tools to work together in real time
- Peer support, especially between high performing and low - performing students

Teachers and students were able to exchange ideas and communicate more effectively

Survey respondents (teachers) that agreed or strongly agreed to the following statements
n=252 (14 schools); 2021-23

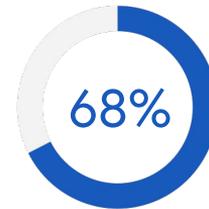


Students are encouraged to **collaborate more with their classmates.**¹



Students are encouraged to **communicate more with their classmates.**¹

Survey respondents (teachers) that agreed or strongly agreed to the following statements
n=252 (14 schools); 2021-23



I (teacher) can **communicate more efficiently** with non-student stakeholders (i.e., parents, other teachers, admin).¹



Teachers in Janggok Secondary School, South Korea, **voluntarily formed a professional learning community in school** to learn from each other.²



Sources: (1) Raw Data from Albus pilot surveys, Dalberg Analysis; (2) "Evaluating Teachers' Perceptions on the Effectiveness of Google Solutions." Seoul National University, (2021).

Case study: Teachers easily created student groups, assigned collaborative activities, and gave group feedback



"The **division of subgroups is appropriate for the teaching and learning of science subjects**. Therefore, I would like to recommend that the children in the subject group can use it."

Teacher, Rittiyawannalai School, Thailand¹



"Through **Chromebook, learners can observe the status of themselves and their peers** (attendance, participation, assignment submission) in real time and share it with the instructor. It is **easier to receive feedback based on real-time learning status**."

Teacher, SNU Girls' Middle School, South Korea²



Note: Photos are illustrative and may not directly map to quotes.

Sources: (1) "Google Solutions for Education in Thailand: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks." Chulalongkorn University, (2021); (2) "A Study on Evaluation of the Effectiveness of Using Google for Education." Seoul National University, (2023); Photos based on those taken by partners during the pilots.

Case study: Teachers collaborated and shared resources, easily and efficiently, with key stakeholders



“Google Tools are like a digital library. They **create connections between the departments for teachers** to share resources and documents.”

Teacher, FPT School, Vietnam¹



“It is **more convenient for teachers to communicate with** colleagues, students, and parents.”

Teacher, Rittiyawannalai School, Thailand²



“I want the best for my students and I **choose to share [resources] with my colleagues.**”

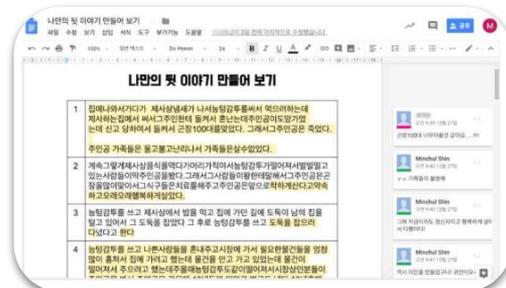
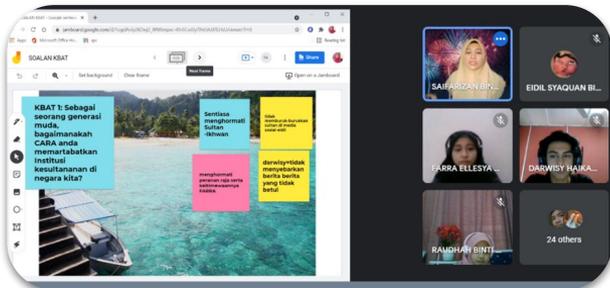
Teacher, Thuc Nghiem Secondary School, Vietnam¹



Note: Photos are illustrative and may not directly map to quotes.

Sources: (1) Raw Data from Albus pilot surveys in Vietnam; (2) “Google Solutions for Education in Thailand: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks.” Chulalongkorn University, (2021); Photos based on those taken by partners during the pilots.

Case study: Students leveraged GfE tools to work together on projects in real time



“The editor feature on Jamboard is specifically conducive to collaboration among students. They could co-create with each other immediately, which aligned with ‘peeragogy’ and helped in group presentations.”

Teacher, SMK Jalan Empat School, Malaysia¹



“Students are more active, they divide up the tasks to work on the device but still talk to each other, improving their communications skills.”

Teacher, FPT School, Vietnam²



Students took turns adding stories on Google Docs in real-time to complete a relay story.

Janggok Secondary School, South Korea³



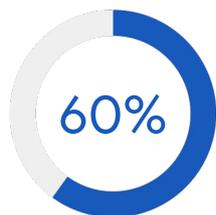
Note: Photos are illustrative and may not directly map to quotes.

Sources: (1) “Project Albus - Building 21st Century Classrooms.” Universiti Kebangsaan Malaysia. (2023); (2) Raw Data from Albus pilot surveys in Vietnam; (3) “Evaluating Teachers’ Perceptions on the Effectiveness of Google Solutions.” Seoul National University, (2021); Photos based on those taken by partners during the pilots.

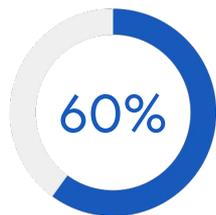
Case study: Increased collaboration nurtures a supportive learning environment for **students**

Survey respondents (students) that agreed or strongly agreed to the following statements

n=997 (14 pilot schools); 2021-23



I **help** my peers and **receive help from my peers in class.**¹



I **help** my peers and **receive help from my peers on homework assignments.**¹



“Higher performing students can see lower-performing student activities and they would immediately help them. There is better feedback and collaboration between students.”

Teacher, Janggok Secondary School, South Korea²



“Google Drive is one of students’ favourite apps as it allows them to store and share data, enabling easy collaboration.”

Teacher, Vinschool Golden River, Vietnam³



“Students [groups] can figure things out on their own right away. [Questions] will result in knowledge exchange through online classrooms where students can communicate with one another at the same time.”

Teacher, Rittiyawannalai School, Thailand⁴



Sources: (1) Raw Data from Albus pilot surveys, Dalberg Analysis; (2) “Evaluating Teachers’ Perceptions on the Effectiveness of Google Solutions.” Seoul National University, (2021); (3) “Google Solutions in Vietnam: How Technology Transforms Teaching and Learning.” Vietnam National Institute of Educational Sciences, (2023); (4) “Google Solutions for Education in Thailand: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks.” Chulalongkorn University, (2021)

GfE allowed students with different abilities and schools in unique contexts to access more resources

 **70%** Of teachers **across varied school settings** (e.g. religious schools, school for children with hearing impairments) **and countries** agreed that their **students perform better** with GfE and Chromebooks

School for children with hearing impairments

Using Google Workspace tools (e.g., Classroom, Meet) to tailor for specific accessibility needs

Religious school

Identifying local barriers for adoption and provide adaptive training to bridge the 'digital divide'

Case study: GfE opened the doors to learning for children with hearing impairments

School at a Glance: Setsatian School for the Deaf is Thailand's first school for the deaf that aims to develop academic and vocational skills for students with hearing impairments.

Challenge

Pre-pilot

- Accessibility to resources
- Limited ability to interact in a wide variety of settings

Solution

- ✓ **Google Meets' Live Transcription**
 - **Broadens access** - wider range of speakers and resources
 - **Seamless** communication - no time lags, diverse range of options
 - **Flexibility** - no need for a sign language interpreter
- ✓ **Google Classroom**
 - **Cultural and linguistic** diversity - gather and integrate resources

Impact



"Chromebook's ability to do live transcription means that my students **now have access to hundreds of new people and resources**, for whom I would previously need to schedule a sign-language translator for."

Teacher, Setsatian School for the Deaf, Thailand¹

Note: Photos are illustrative and may not directly map to quotes.
Sources: (1) Raw Data from Albus pilot surveys in Thailand; Photos based on those taken by partners during the pilots.



Case study: Bridging the digital divide in a madrasa, or Islamic school, with effective training and adaptable tools

School at a Glance: Madrasah Tsanawiyah Mukhlishin is a typical junior secondary madrasa with 200 students. Teachers at madrasas traditionally have little exposure or experience with technology due to the conservative nature of religious schools.

Challenge

Pre-pilot

- 1 in 10 teachers viewed technology as ‘harmful’
- <20% of teachers were comfortable using GfE technology in their classrooms

Solution

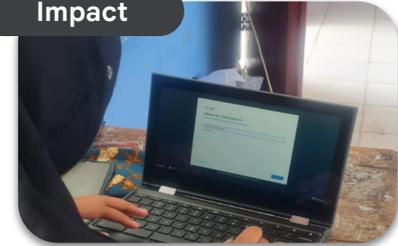
Effective in-person training

- Addressed underlying barriers towards adoption

Relevant and diverse tools

- Contextual
- Localized and adaptive

Impact



“Before Google for Education tools, it was **difficult for me to explain the distance for the *solat jamak* and *qasar* in Islamic studies**, but now with Google Maps, it is much simpler to show them (students) the distance.”

Teacher, Madrasah Tsanawiyah Mukhlishin, Indonesia¹

Note: Photos are illustrative and may not directly map to quotes.

Sources: (1) “The transformation journey of MTs Al Mukhlishin through the Utilization of Google Workspace Technology to Enhance Learning Experience.” Pradita University, (2022); Photos based on those taken by partners during the pilots.

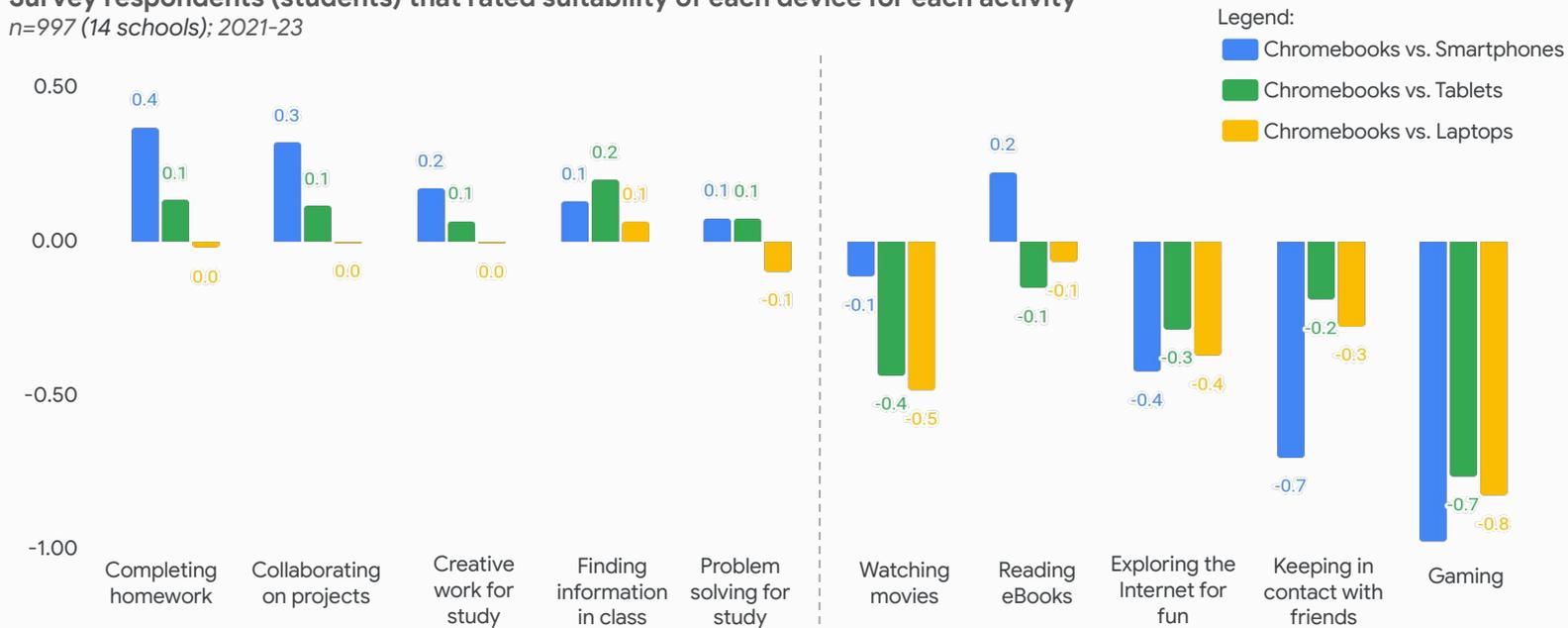
Chromebooks are more suitable for educational purposes

Chromebooks **outperform on educational** activities...

... and are **not seen as recreational** devices

Survey respondents (students) that rated suitability of each device for each activity¹

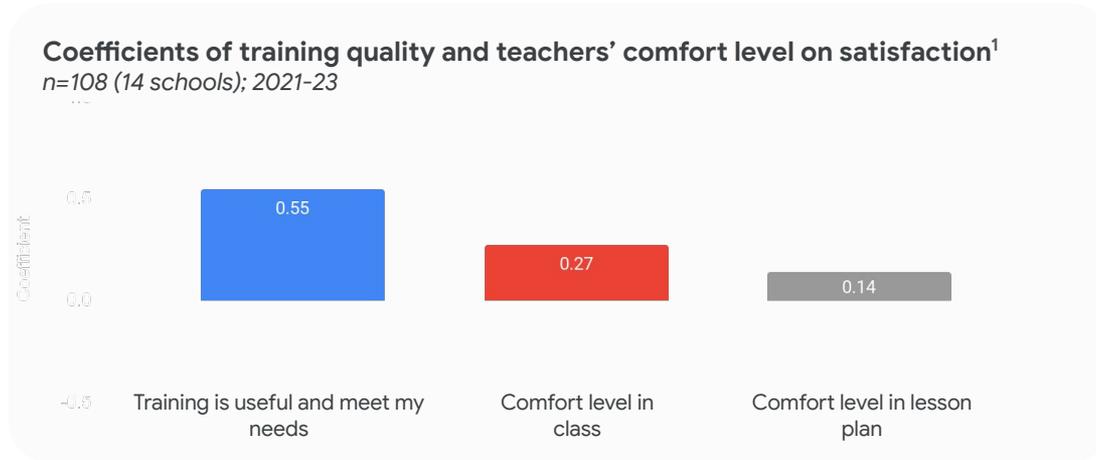
n=997 (14 schools); 2021-23



Sources: (1) Raw Data from Albus pilot surveys; Question: "Please rate how suitable Chromebooks/tablets/smartphones are for the following activities."; Dalberg analysis.

Teachers who enjoyed the training during the pilot are more likely to adopt tools

Coefficient on each variable indicates the point increase in satisfaction when the respective variable increases by 1 point



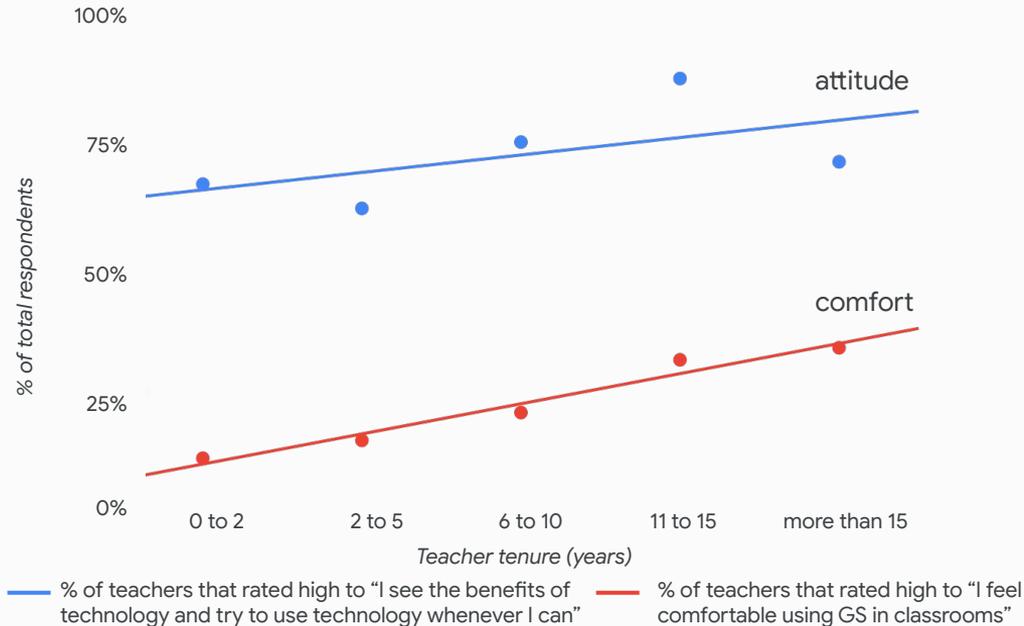
Quality of training played a critical role in increasing teachers' satisfaction, and thereby adoption of GfE tools

Note: Multiple linear regression is significant at 5% in explaining teachers' satisfaction, with F-statistic = 7.3, df = 105
Sources: (1) Raw Data from Albus post-pilot teacher survey data; Dalberg analysis

Tenured teachers more likely to be digital transformation ‘champions’

Teacher attitude towards technology and comfort level with GS, by tenure

n=317 (16 schools); 2021-23



Tenured teachers are more likely to be “tech influencers” that can champion the use of technology in classrooms

Sources: Raw Data from Albus pilot surveys; Dalberg analysis.

Project Albus

Annex

Glossary of terms (1 / 2)

Terms	Description
Digital transformation	Digital transformation in the context of education refers to enhancing teaching and learning delivery using technology to improve effectiveness and efficiency, supporting student progression, and enhancing the quality of teaching methods like online learning.
Impact	Impact in the context of digital transformation in education involves enhancing the experience of both teachers and students in classrooms as well as the efficiency gains from better management of curricular activities and other administrative tasks.
Productivity	Teacher productivity in this context largely refers to time savings from automation, streamlining, access resources, generate insights using digital tools, but also includes optimizing time for more important tasks such as direct instruction.
Tailored teaching	Tailored teaching ensures every student learns in a way that is suitable for them. Teachers can tailor learning environment, instructions, content, product / output based on student readiness, interest, or style of learning.
21st century skills	Skills that enable students to thrive in and beyond school while living, learning and working in rapidly changing, highly digitalised, and interconnected environments. These include Critical, Adaptive and Inventive Thinking, Communication, Collaboration and Information Skills, Civic, Global and Cross-Cultural Literacy.
Student agency	Student agency refers to the capacity to set a goal, reflect and act responsibly to effect change and be active agents in their own learning.
Engagement	Student engagement refers to the degree of attention, curiosity, interest, optimism, and passion that students demonstrate in classrooms that extends to the level of motivation they have to learn and progress.

Glossary of terms (2 / 2)

Terms	Description
Accessibility and inclusion	Accessibility in education refers to designing teaching and learning in support of equitable access for all students, including those differently abled. Inclusion in education refers to ensuring digital tools are designed in a way that promotes participation of all schools across varied settings, including those with limited technology capacity.
GfE tools	Refers to Google for Education tools that include GMail, Calendar, Meet, Classroom, Docs, Sheets, Slides, Forms, Assignments, Admin, Drive, Groups, Sites, Tasks, and more upcoming tools (YouTube Interactive Questions, Practice Sets) that will be launched in the future.

Albus asset stack (1 / 2)

Quantitative data (for all pilot countries)

[Raw data from Albus pilot surveys](#) (2020 - 2023)

[Analysis of data from Albus pilot surveys](#) (2020-2023)

Qualitative data



[“Google Solutions for Education in Thailand: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks \(Interim Report\).”](#) Chulalongkorn University, (2021)



[“Google Solutions for Education in Thailand: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks.”](#) Chulalongkorn University, (2021)



[“Project Albus - Building 21st Century Classrooms.”](#) Universiti Kebangsaan Malaysia, (2023)



[“Technology Enhancing Bilingual Instruction: A Pilot Study of a Junior High School with Google Solution.”](#) National Taiwan Normal University, (2022)



[“The transformation journey of MTs AI Mukhlishin through the Utilization of Google Workspace Technology to Enhance Learning Experience.”](#) Pradita University, (2022)

Albus asset stack (2 / 2)

Qualitative data



["Evaluating the Effectiveness of Google for Education Products in Korean Classroom."](#) Seoul National University, (2023)



["Evaluating Teachers' Perceptions on the Effectiveness of Google Solutions."](#) Seoul National University, (2021)



["A Study on Evaluation of the Effectiveness of Using Smart Devices for Teaching and Learning."](#) Seoul National University, (2023)



["Minister turns to AI classes to cool competition in education."](#) The Korea Herald (2023)



["Accelerating Teacher's Learning & Teaching Experience through Google Solutions in the Classrooms of Pakistan."](#) Shafiq et al., (2023)



["Google Solutions in Vietnam: How Technology Transforms Teaching and Learning."](#) Vietnam National Institute of Educational Sciences, (2023)

Approach and methodology for data collection

Albus pilots use 3 main modes of data collection to get quality quantitative and qualitative data



Surveys

Pre-pilot and post-pilot for both participating teachers and students



Interviews / focus group discussions

Facilitated by independent academics



Observations

Understand how teachers and students interact with GfE tools and devices

Data captures the delta across 3 main attributes, key for digital transformation

1 Attitude and mindset

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



2 Knowledge

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



3 Capability / Behavior

- Which tools were most used? Why?
- Which were most effective? What challenges did you face while using digital tools?



Impact

- Did student engagement, collaboration, creativity, conceptual learning, self-driven learning increase / decrease?
- What was the change in teacher productivity / time?
- What was the impact on teaching (e.g. tailored content)?
- Which device is most effective for learning?

Note: Questions are indicative and non-exhaustive