K-12 BLUEPRINT

Crucial Education Moments	Sponsored by Microsoft
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Inclusively Designed Digital Notetaking

Comparing Microsoft OneNote Live Captions and Google Workspace for Education in supporting accessible notetaking

Executive Summary

Inclusive design allows all people—regardless of native language, ability, or needs—to participate fully in the world. In a K-12 classroom, inclusive design provides each student the tools and resources they need to engage with content, collaborate with their peers, process new ideas and skills, and express their knowledge. Students and teachers alike need simple-to-use tools that empower classroom learning.

Available across platforms and devices, Microsoft OneNote Live Captions* allows students to automatically generate captions of lessons into OneNote notebooks in real time. With over 100 languages and dialects available[1], students can create live transcriptions in their chosen language and then save the captions in the notebook. With simple controls and tools, students can pause the transcription, make annotations to their notebook, and highlight important sections of the captions in a single page of their OneNote notes.

By comparison, to conduct a similar process using Google Workspace for Education* tools requires combining Google Keep* and Translate*. In stark contrast to OneNote Live Captions, students need to initiate a multi-step, multi-window translation process, a challenging feat for younger learners or those with language or ability barriers.

For students and educators alike, OneNote Live Captions provide an inclusively designed solution that can help improve representation and engagement with academic content.

[1] Source: Translator Features

Empowering Every Student through Universal Design

In 1984, the Center for Applied Special Technology (CAST) was created "to explore ways of using new technologies to provide better educational experiences to students with disabilities."[2] Shortly thereafter, the organization established the Universal Design for Learning (UDL) framework based on architectural concepts developed by Ronald L. Mace at North Carolina State University in the 1960s. Katie Novak, co-author of UDL Now! Innovate Inside the Box, believes that "UDL is a framework for designing learning experiences so students have options for how they learn, what materials they use, and how they demonstrate their learning."[3] CAST organizes its UDL guidelines into three categories to support all phases of learning: Engagement, Representation, and Action & Expression.

Inclusively Designed Digital Notetaking

OneNote Live Captions	UDL Guideline	Google Keep
👍	**Representation 1.2[4]:** Offer alternatives for auditory information	👎
👍	**Representation 2.4[5]:** Promote understanding across languages	👎
👍	**Representation 3.4[6]:** Maximize transfer and generalization	👎
👍	**Engagement 7.3[7]:** Minimize threats and distractions	👎
👍	**Action & Expression 4.2[8]:** Optimize access to tools and assistive technologies	👎
👍	**Action & Expression 6.3[9]:** Facilitate managing information and resources	👎

[2] Source: Timeline of Innovation
[3] Source: If Equity is a Priority, UDL is a Must
[4] Source: Offer Alternatives for Auditory Information
[5] Source: Promote Understanding across Languages
[6] Source: Maximize Transfer and Generalization
[7] Source: Minimize Threats and Distractions
[8] Source: Optimize Access to Tools and Assistive Technologies
[9] Source: Facilitate Managing Information and Resources

With the diversity of U.S. K-12 classrooms constantly evolving, school systems need tools that are built-in, mainstream, and non-stigmatizing, so they can support all learners. As of the 2020-21 school year, over 7.2 million students receive special educational services.[11] More specifically, one-third of students receiving special education services have a specific learning disability, such as dyslexia; approximately 5% of people have auditory processing disorders[12], and 15% of all people have a disability[13].

Additionally, Edweek reports[14] an estimated 4.9 million children in U.S. public schools are learning the English language for the first time. 75.2% of English Language Learner (ELL) students in public schools report Spanish as their home language, with Arabic and Chinese reported as second and third.[15]

> 66 **When implemented with a lens of equity, the [UDL] framework has the potential to eliminate opportunity gaps that exclude many learners, especially those who have been historically marginalized. If we want all students to have equal opportunities to learn, we have to be incredibly purposeful, proactive, and flexible.[10]**
>
> — **Katie Novak,**
>   co-author of *UDL Now! Innovate Inside the Box*

Consequently, as schools provide digital resources for each student, districts must ensure inclusively designed tools that help students access and engage with content in an equitable way.

Federal Laws and Supports Mandating Inclusive Education		
Schools must provide accessible accommodations to all qualifying students. This applies to technology as much as the physical infrastructure of the school.		
ADA - from 1990, prohibits discrimination and guarantees equal opportunities	IDEA - Individuals with Disabilities Education Act most recently 2015. Ensures a free public education to eligible children with disabilities throughout the nation and special education and related services to eligible children.	Title I - provides funds to schools with high level of students with low socio-economic levels.
IEPs - Individualized Education Program that serve as a legal contract between families and schools.	Section 504 - Part of the Rehabilitation Act of 1973. Prohibits discrimination based on disability.	Bilingual Education Act (BEA) - Passed in 1967, BEA was the first federal U.S. legislation that guaranteed access to education for English learners.

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[10] Source: If Equity is a Priority, UDL is a Must
[11] Source: Students with Disabilities
[12] Source: Auditory Processing Disorders Demographics
[13] Source: World Report on Disability
[14] Source: The Nation's English-Learner Population Has Surged
[15] Source: National Center for Education Statistics

Learning Scenario

The following scenario compares the step-by-step process that a representative sixth grade student would complete to access a translated transcription of direct instruction in Polish, her home language. For comparison, we used Microsoft OneNote Live Captions and Google Keep and Translate. The transcribed audio comes from "Earth Navigators: Arctic Summer."[16]

At a Glance

Topic

Arctic Animal Adaptations

Subject

Science

Grade Level

6th grade

Accommodation

Ensure that classroom instruction is accessible to all students regardless of their home language.

[16] Source: Earth Navigators: Arctic Summer

Step by step Comparison

Test Devices

In conducting this comparison, the K-12 Blueprint team tested the following devices and configuration:

- **Microsoft Surface Go 2** running Windows 11 Pro 22000.493

- **ASUS Chromebook Flip C436** running 101.0.4951.59 (Official Build) (64-bit)

Accessible Notetaking using OneNote Live Captions

Teacher steps for Live Captions.

1. Open Microsoft Translator app on a mobile device > Click on Conversation icon.

2. Add your name and input language.

3. Share the Conversation code with the students.
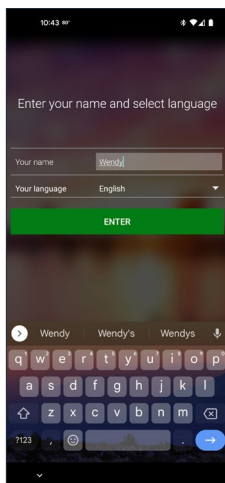
Student steps for Live Captions.

1. Open OneNote > Select Class Notebook.
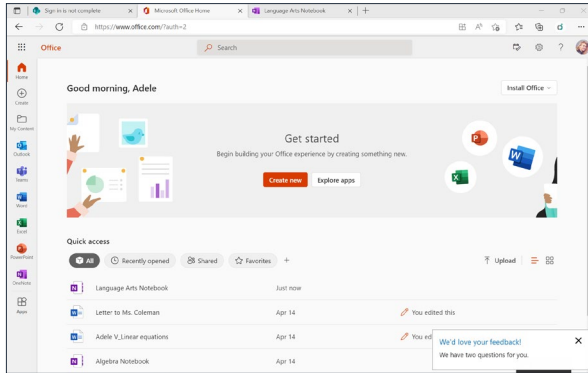
2. Select Notes > Rename page (if desired).
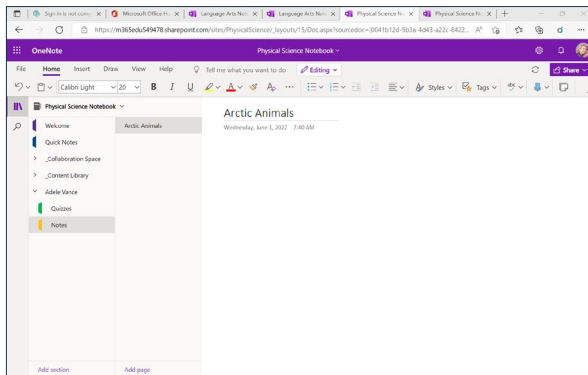
3. Select View on tool bar > three-dot menu > Live Captions.
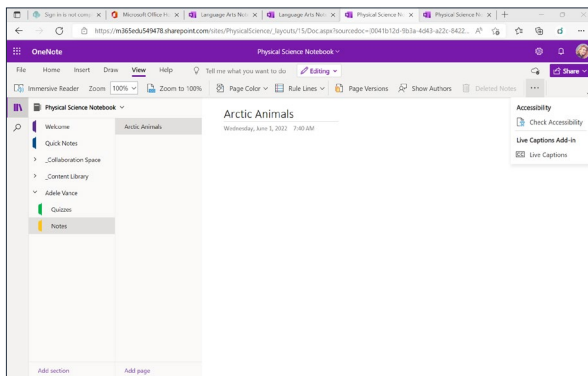
4. Enter Join code > select Captions language > Join.
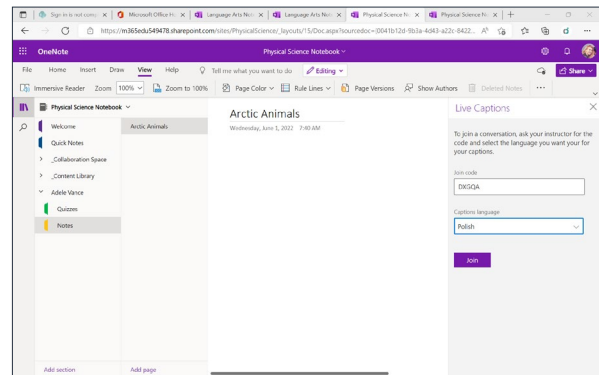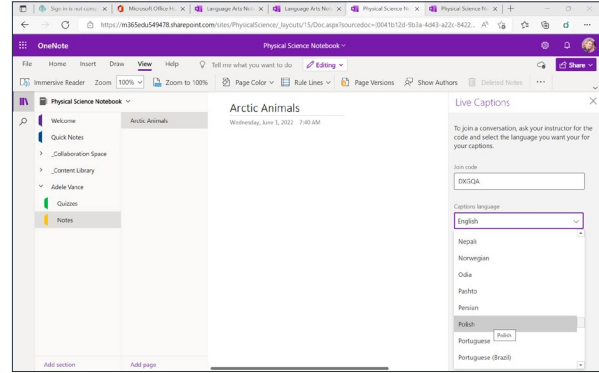
5. Live captions appear on the right-hand side. Students can take notes on the left-hand side simultaneously.
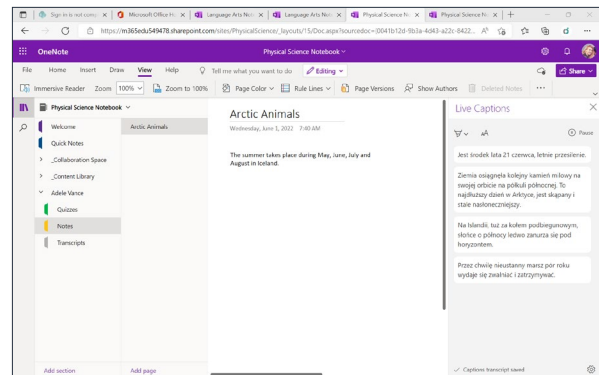
6. Highlight or pause captions.
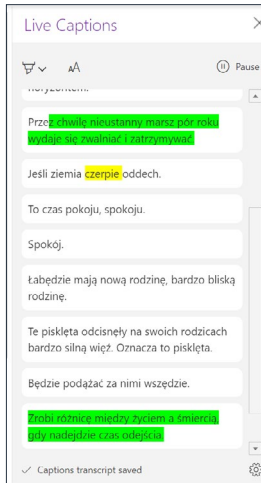
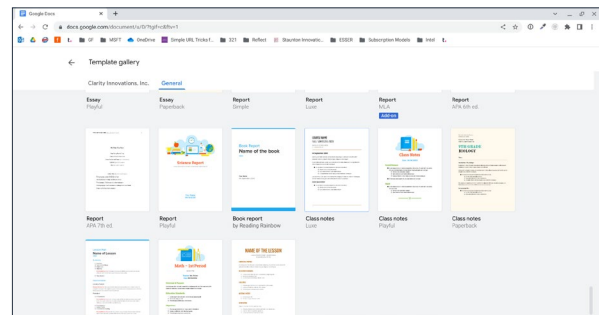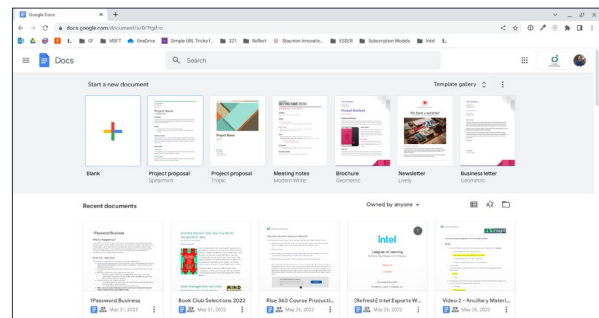7. Automatically save live caption transcripts in generated section in the notebook.
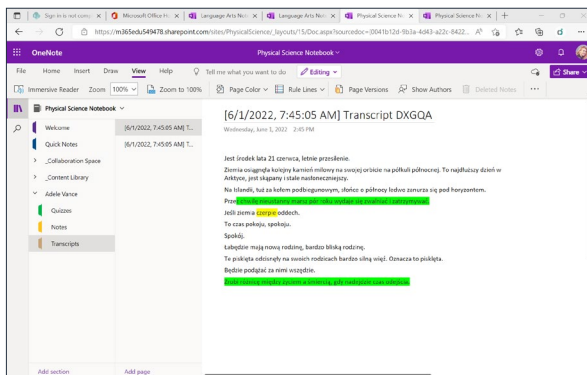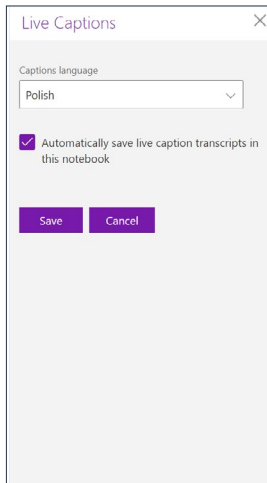
Accessible Notetaking using Google Keep and Translate

1. Open the app launcher > select Google Docs*.
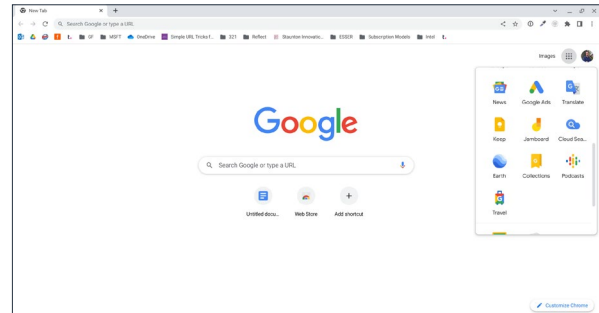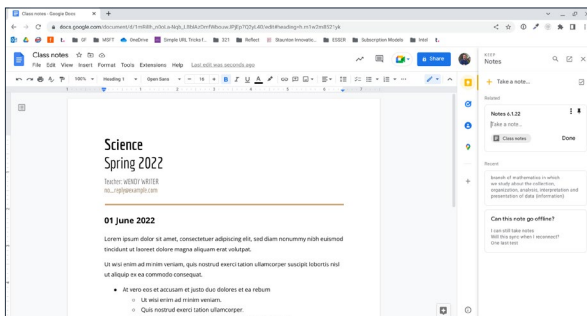

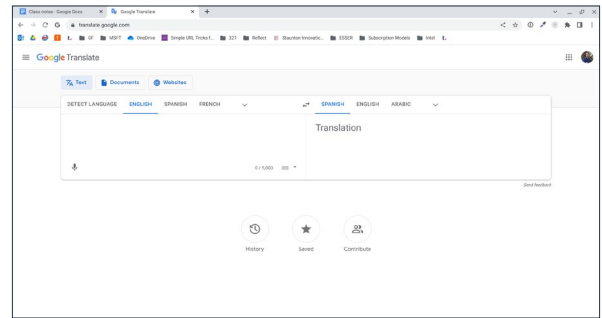2. Open the template gallery > select Class notes
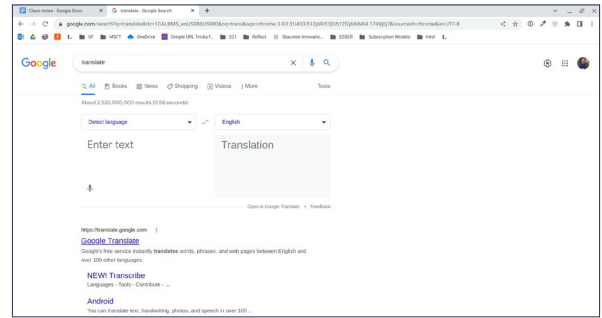
3. Click on the Keep icon.
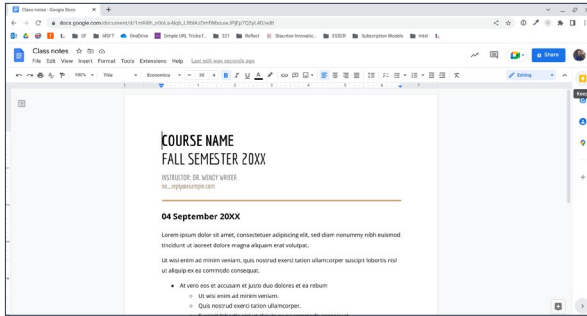
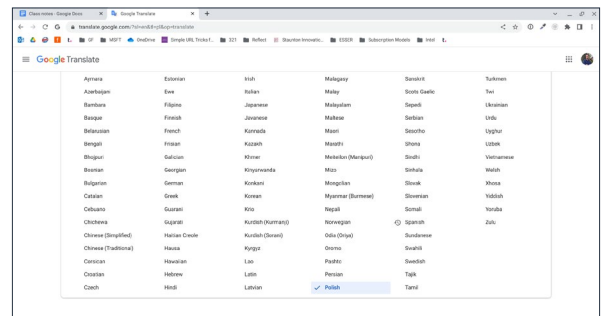**4.** Click Take a note.
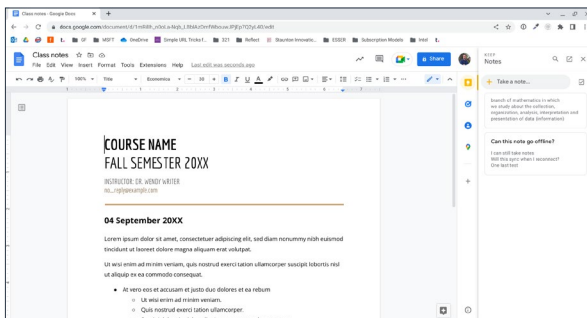
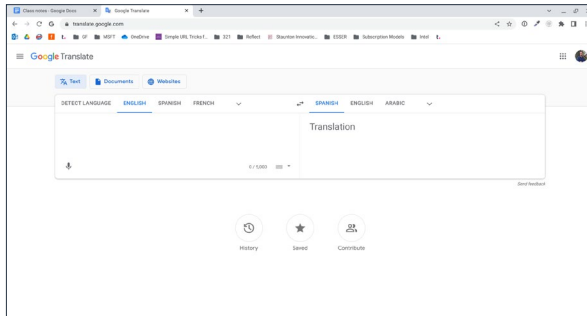**5.** Title the note.

6. Open a new tab > search for translate > open Google Translate.

7. Select a translation language.

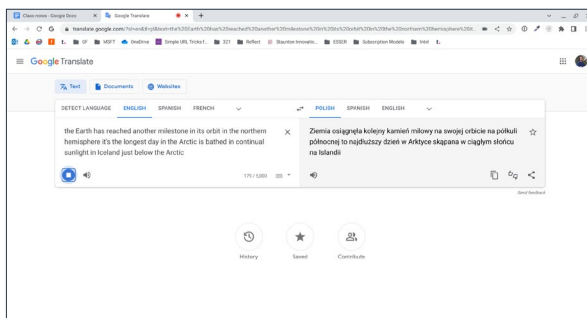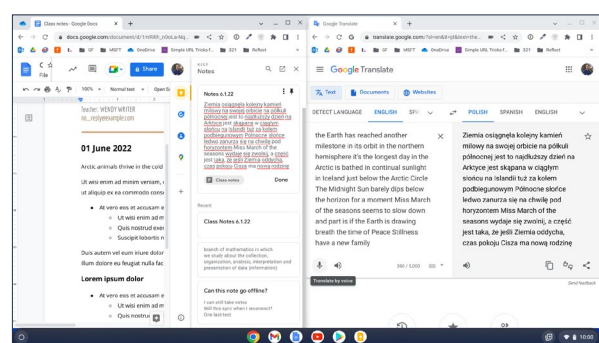**8.** Click the microphone icon.
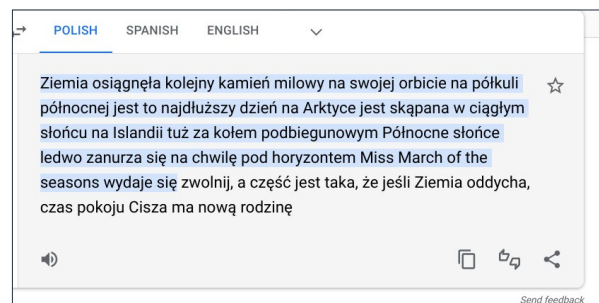
9. The teacher begins talking and translations start.

10. Arrange windows to be side-by-side > take notes on left-hand side as translations display on right-hand side.

11. Copy translations.

12. Paste translated transcription into note.
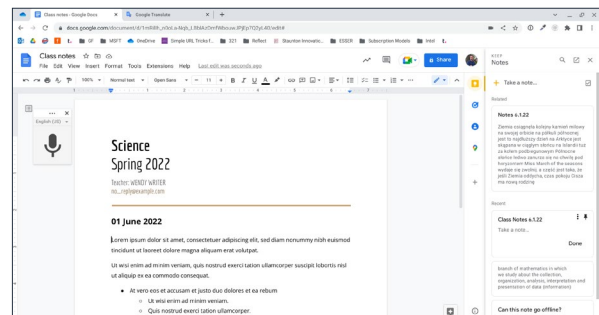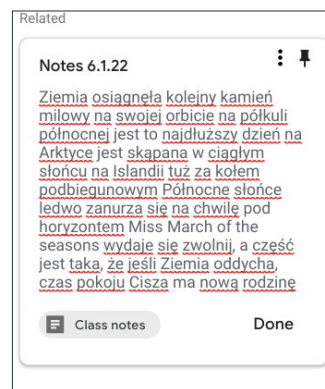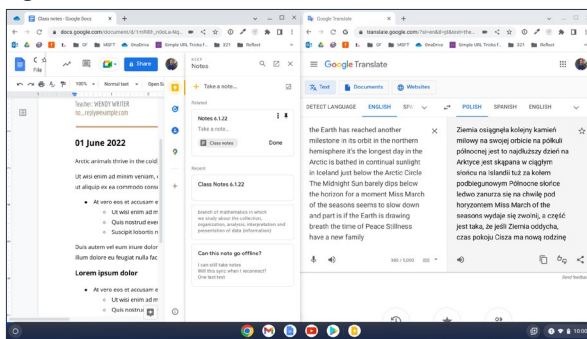
Conclusion

As schools continue to support an increasingly diverse student population and their varied needs and preferences, it is imperative that they adopt guiding principles, such as the UDL framework, to intentionally support each learner. Inclusively designed digital notes help learners choose how they want to access, represent, and engage with content through accessibility features like captioning, translating, presenting content side-by-side, and removing distractions.

Providing a simple feature built directly into OneNote, students can access transcripts in line with their instructional content and translate, highlight, and pause captions in real time. Microsoft's commitment to equitable education is exemplified through inclusively designed features like OneNote Live Captions.

Combining Google Keep and Translate, the Google Workspaces for Education equivalent, requires students to manage multiple tools, windows, and tabs to engage with verbal instruction within a digital notetaking interface. The Google option lacks a simple, single interface for students to engage with content in an accessible format.

	Microsoft OneNote Live Captions	Google Keep
How many steps for the student?	8	19
Sample Results	Translated transcription automatically added to Class Notebook	No transcription or translation features within Keep

When comparing both Microsoft OneNote Live Captions and Google Keep and Translate for making instructional content accessible for students, the Microsoft OneNote Live Captions provides a superior experience for learners than the equivalent experiences using Google solutions.