COVID-19 Impact on Digital Learning
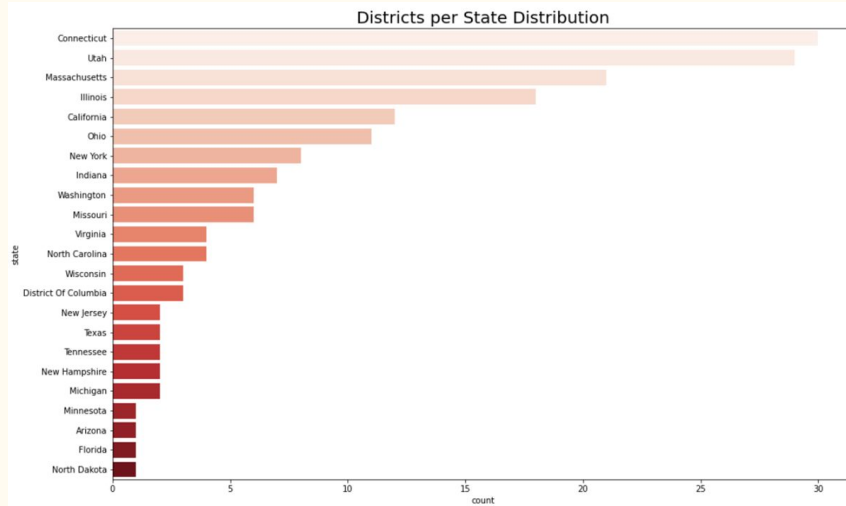
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For teachers, what are the best digital products to make students engage more in online classes?

Agenda

1. Overview
2. 2020-US-school-year timeline
3. Product Engagement
4. Recommendations

1. Overview

Districts per State Distribution

Locale Distribution

- Data from **1/2020 - 1/2021** in the **US**, regarding e-platform products, providers, and engagement
- Most data was registered in states like Connecticut, Utah, Massachusetts, Illinois or California
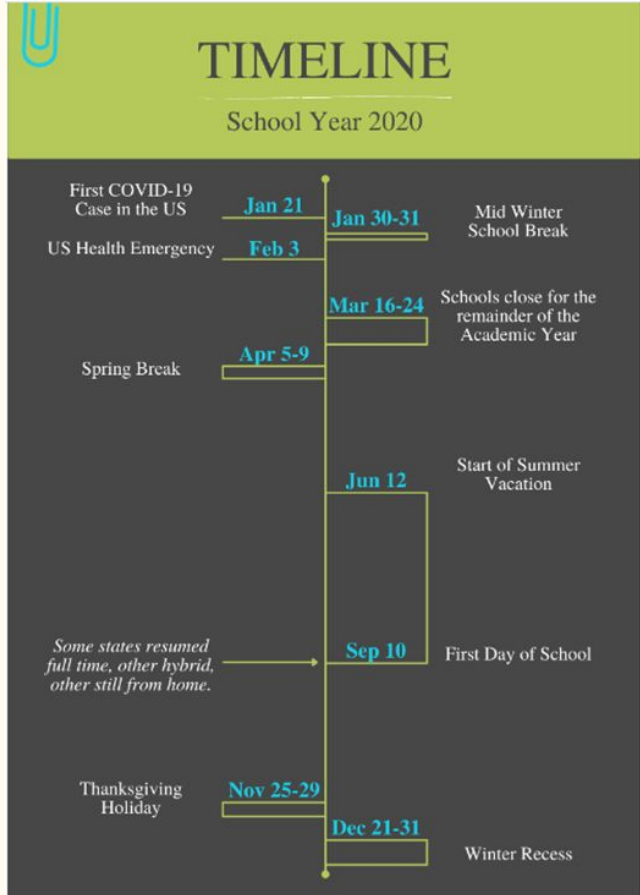- **More than a half** of the districts are located in the suburbs.
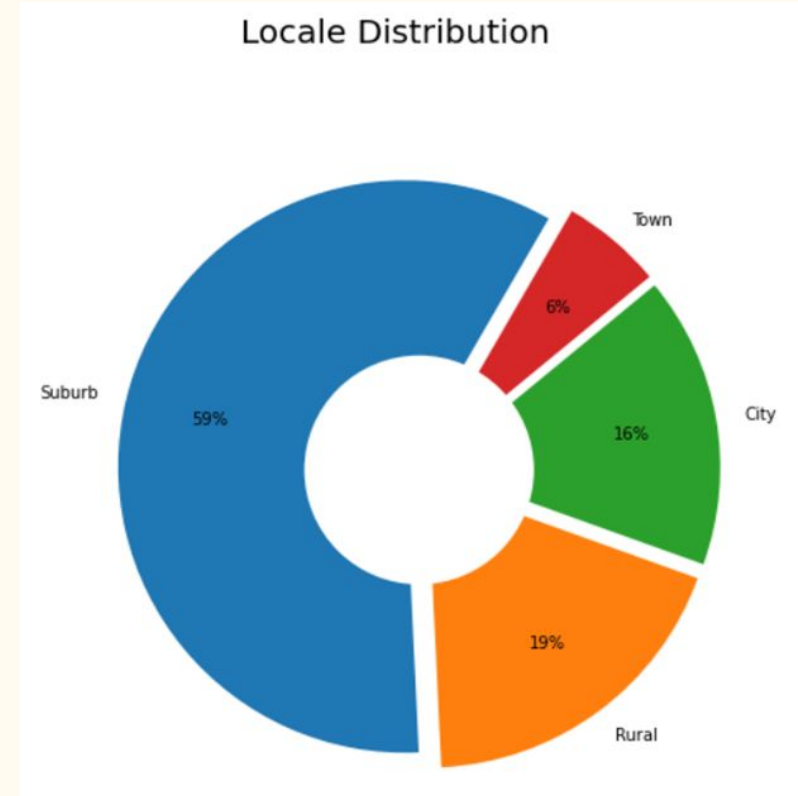
1. Overview
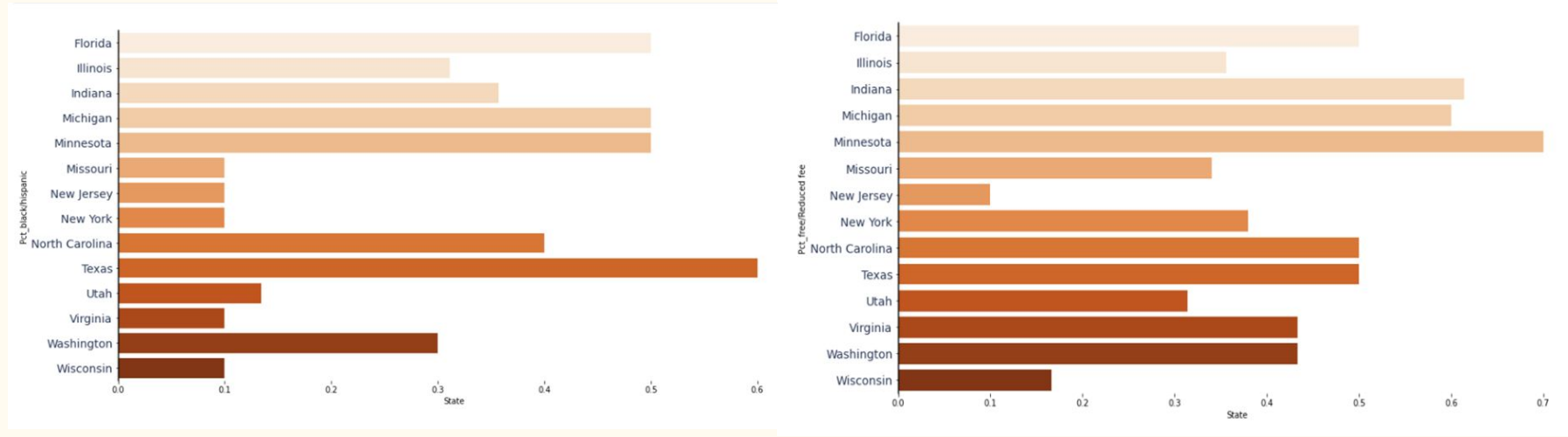
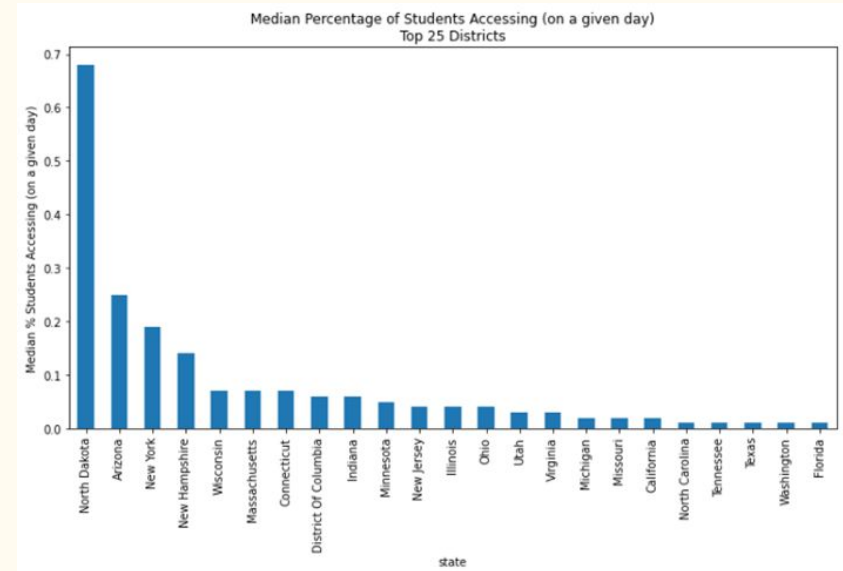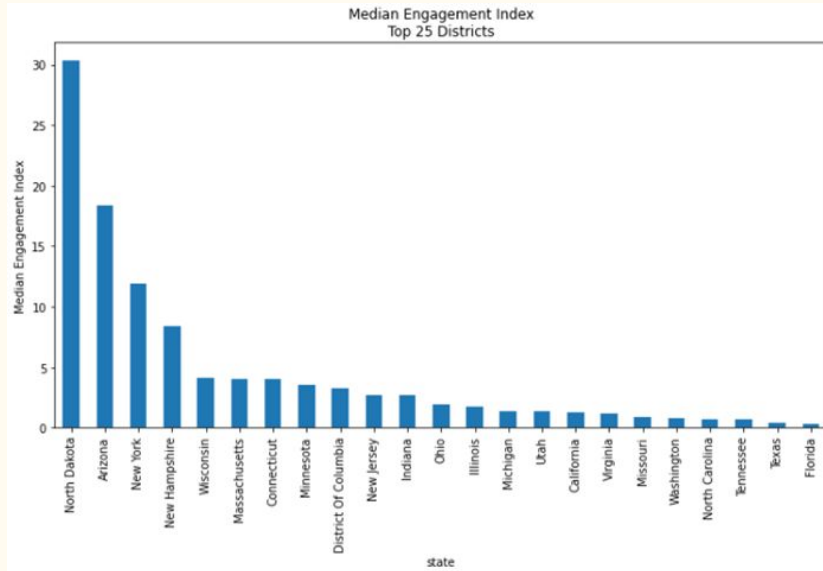
The majority of the schools in the state:

- have more than **30%** of students identified as Black/Hispanic
- have more than **35%** of students eligible for free or reduced price lunch

2. 2020-US-school-year timeline

TIMELINE
School Year 2020

First COVID-19 Case in the US — Jan 21
US Health Emergency — Feb 3
Jan 30-31 — Mid Winter School Break
Mar 16-24 — Schools close for the remainder of the Academic Year
Apr 5-9 — Spring Break
Jun 12 — Start of Summer Vacation
Some states resumed full time, other hybrid, other still from home. — Sep 10 — First Day of School
Thanksgiving Holiday — Nov 25-29
Dec 21-31 — Winter Recess

- Schools started to cease all on site activity **between 16th and 24th of March 2020**

- Schools in most states resumed activity at **the beginning of the next school year** in **Sep** 2020

- **Spring break is in April, summer breaks** starts in June - July, while **winter holiday** begins in late December

- Compared to pre-Covid, schools **close** in a **longer** time during the Spring semester (**Mar-Apr**)

3. Product Engagement

Median Engagement Index
Top 25 Districts

Median Percentage of Students Accessing (on a given day)
Top 25 Districts

- The median percentage of active users (in terms of engagement, access) on a given day for a product varies widely depending on States

- The biggest engagement is in **North Dakota, Arizona, New York, New Hampshire,** because:
  - Arizona and New York have the highest number of confirmed cases (WHO, 2020)

3. Product Engagement
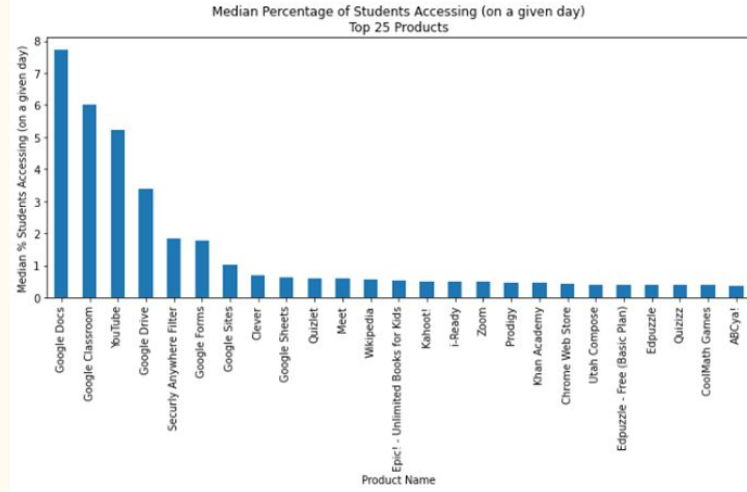

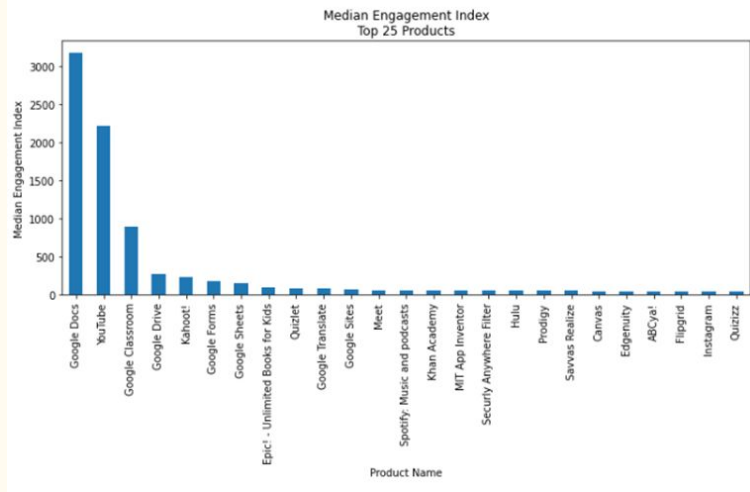Top 10 Provider/Company Names
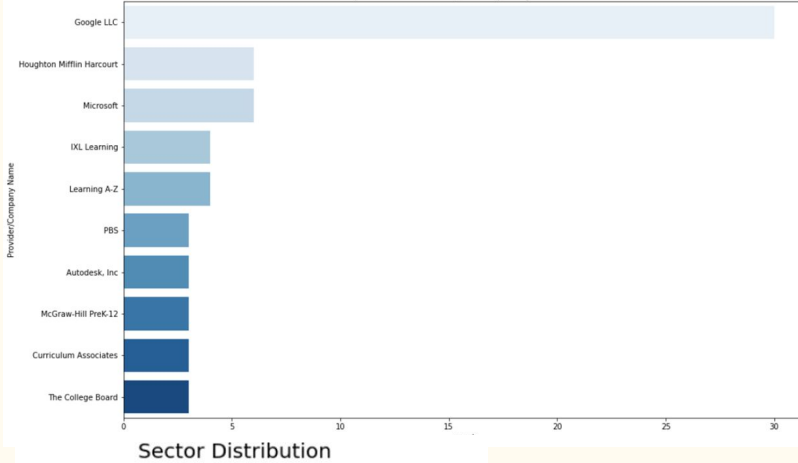
Top 10 Primary Essential Functions

Sector Distribution
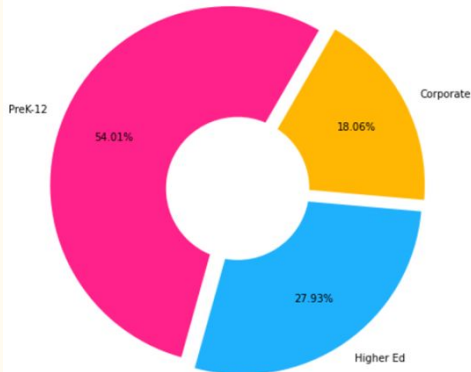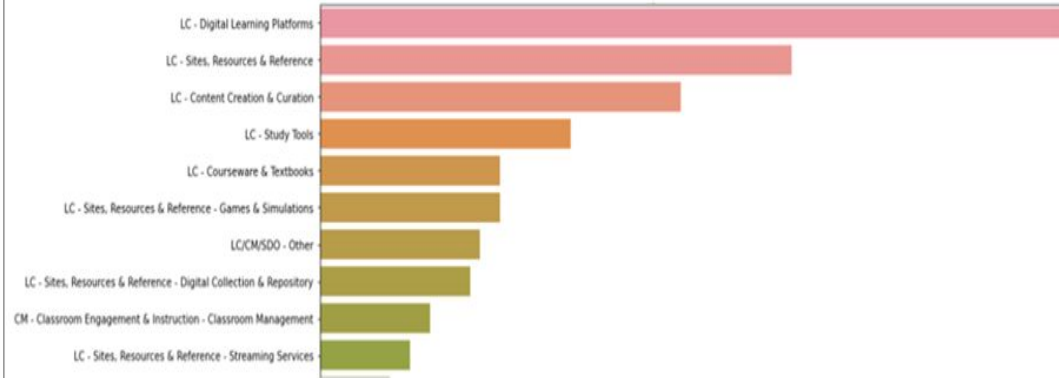
- Top 3 purposes of digital products are for **providing learning platforms**, **referencing**, and **content creation**

- The majority of users are in **primary education (>50%)**

- **Google** is the most used products, representing **more than 30%** of all studied products (see more the next slide)

3. Product Engagement

Median Engagement Index — Top 25 Products

Median Percentage of Students Accessing (on a given day) — Top 25 Products

- Most used educational products in 2020 were **Google products** (like Google Docs, Google Classroom, Google Drive, Google Forms, Google Sheets, Google Meet, Youtube). Because Google has a **vibrant third party ecosystem,** Google has *monopoly* so far over the online educational instruments.
- **Interestingly, Google Meet** is a prefered tool to **MS Teams & Zoom. Potential reason (*)**:
  - security by default,
  - proactive defenses against hackers,
  - reliability encryption,
  - no desktop software to install
  - same UX on mobile & desktop
- In contrast, all the others had extremely little to no median engagement throughout the year, because:
  - Teachers do not have time and sometimes the ability to research these products → they stick with what they know already (Google products) (**)

(*) Patrick, B. (2021) 'Zoom vs Teams vs Google Meet, which is right for you?' Journal of Accountancy.

(**) Koperniak, S. (2021) 'Studying learner engagement during the Covid-19 pandemic' MIT News.
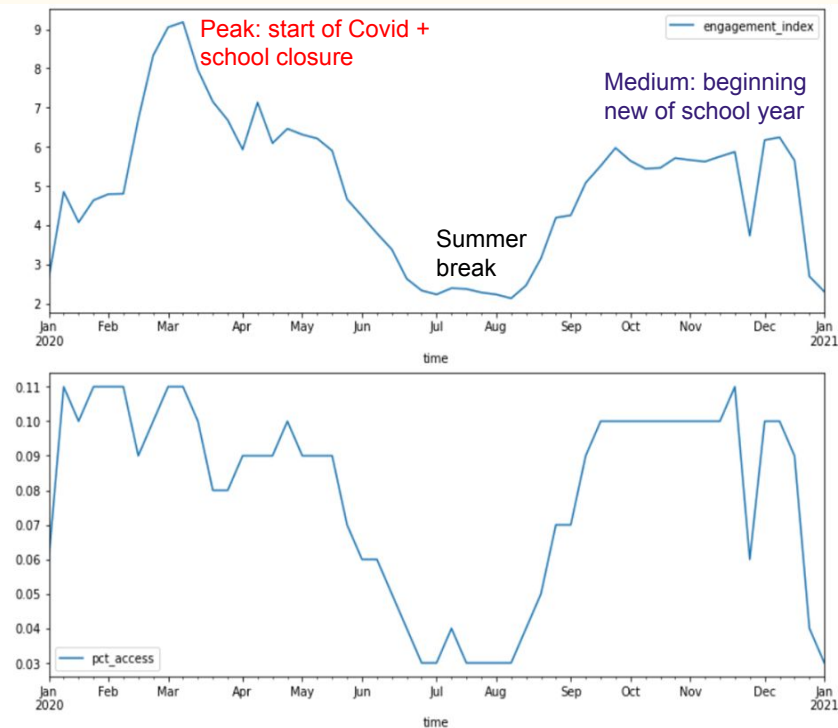
3. Product Engagement

Mean daily page-load events in top 5 tools
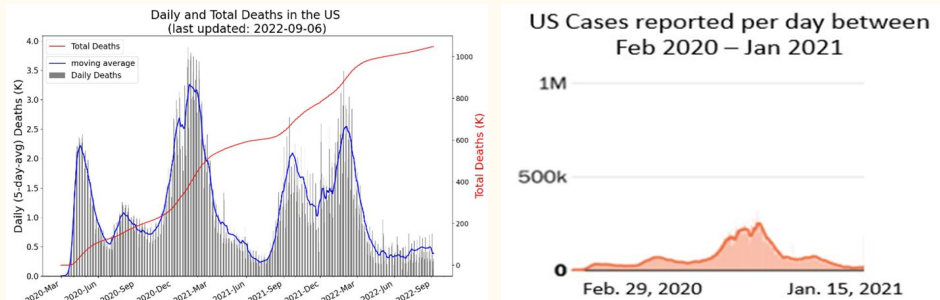by tools and time, per 1 student
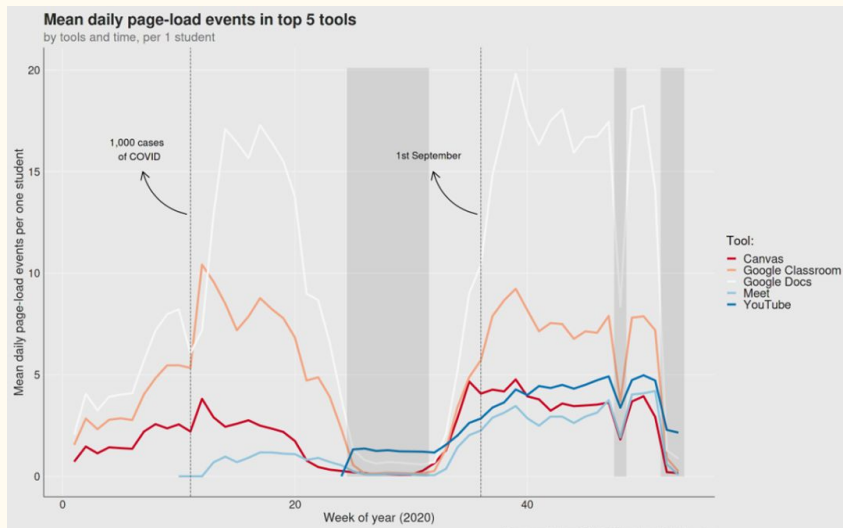
- Considering **Google Docs & Google Classroom**, the increase in popularity appeared with the **start of remote learning for summer holidays** and **after returning from Christmas holidays**
- The situation is different with **YouTube and Meet**, which only gained popularity in distance learning from **August / September**

3. Product Engagement

Engagement & Access Indexes

Peak: start of Covid + school closure

Medium: beginning new of school year

Summer break

Daily and Total Deaths in the US
(last updated: 2022-09-06)

US Cases reported per day between Feb 2020 – Jan 2021

- **Engagement slightly decreased from Spring semester to Autumn semester**. Potential reasons:
  - **COVID-19 cases were more stable** → Pupils were back to school → use digital products less
  - Both teachers and students started **using more diligently a few products that quickly monopolized** the others
  - **Lack of age appropriate skills**: The majority of users in this dataset are in primary education → children in Primary and Middle school don't know yet how to properly use the technology and might get stuck and frustrated on the way
  - **Low Emotional Stability**: Despite the emotional support they have from their teacher, lack of interaction might have accumulated, leading to them not wanting to engage and participate during the online classes and/or during homework.
  - **Low energy**: Staying in from of a computer 6 hours a day and then doing the homework for another 2 to 3 hours can take a toll on children's overall wellbeing
- Engagement and access indexes are the **lowest** during Jul-Aug because this is a summer break

4. Recommendations
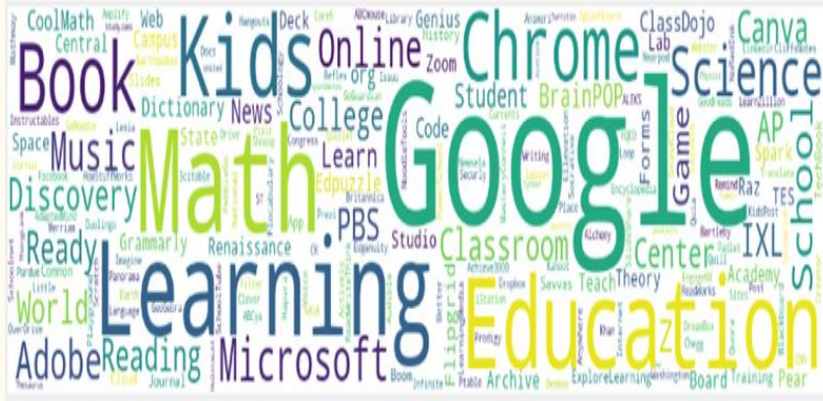
- **For teachers:**

  - For online classes,

    - teachers should try and brainstorm as many new, fun, out of the ordinary lectures to keep the students engaged such as new games, movies or fun interactive ways
    - online classes should be shorter and have different curriculum

  - Teachers should attend extra training sessions organized by digital platform providers to know which one suits their students most
  - Teachers should take part in IT courses, so they could get used to the digital world