

How effective teachers use learning data!

Jake Whiddon



What are we doing today?

Defining
Data &
Insights

Student
Insights

Class
Insights

Language
Learning
Insights

What are we doing today?

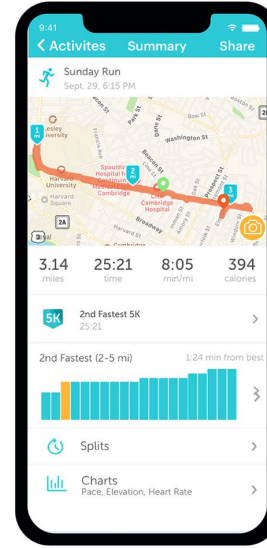
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Where do you see data in
your daily life?

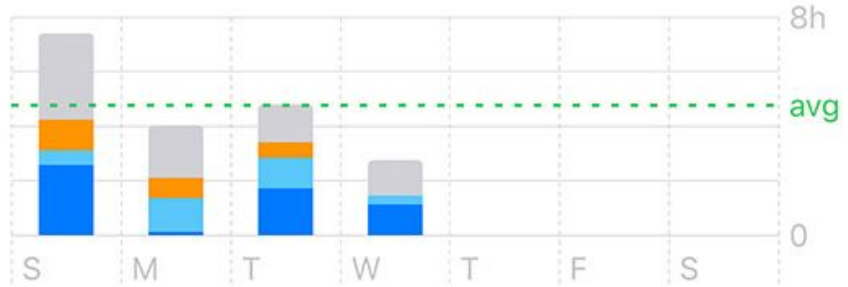


3,451 likes

View all 3,448 comments



Daily Average
4h 45m



Social
5h 32m

Productivity & Finance
3h 13m

Games
2h 27m

Total Screen Time

19h



<https://support.apple.com/en-sg/HT208982>

Downtime



App Limits



Always Allowed

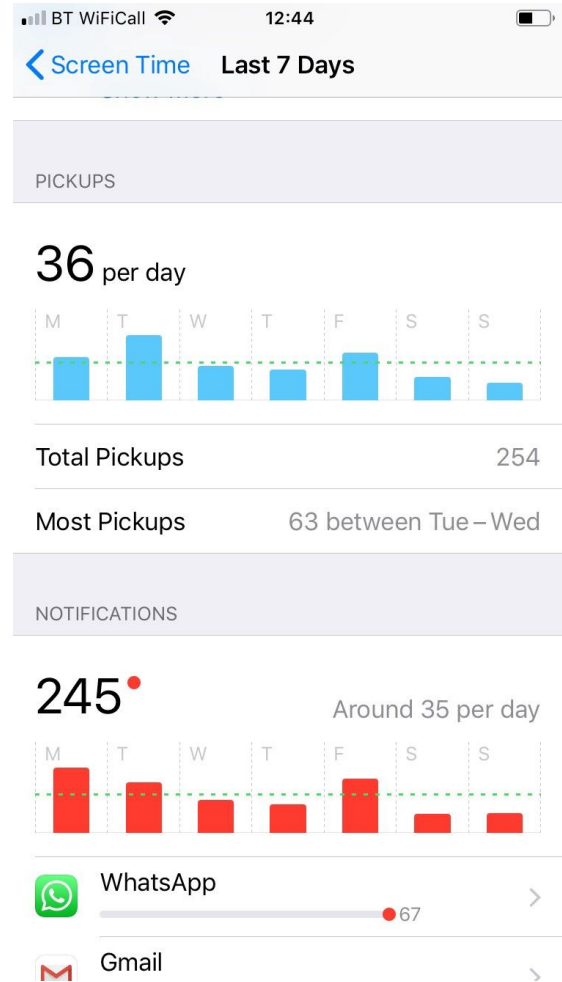




What is the **data** showing?

What **insights** can you see?

What **actions** could you take?





451 likes

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Exercise Apps



What does this data tell you?

What is the **data** showing?

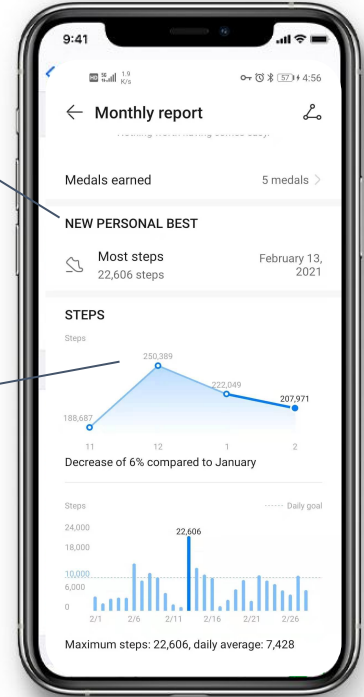
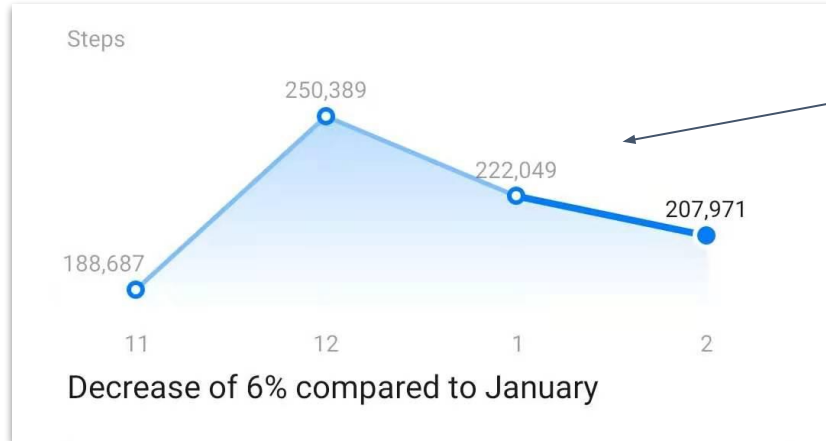
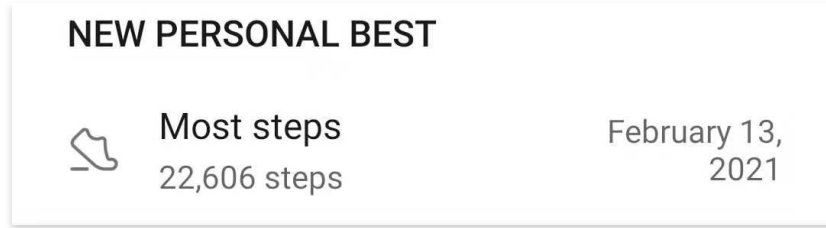
What **insights** can you see?



What is the **data** showing?

What **insights** can you see?

What **actions** could you take?

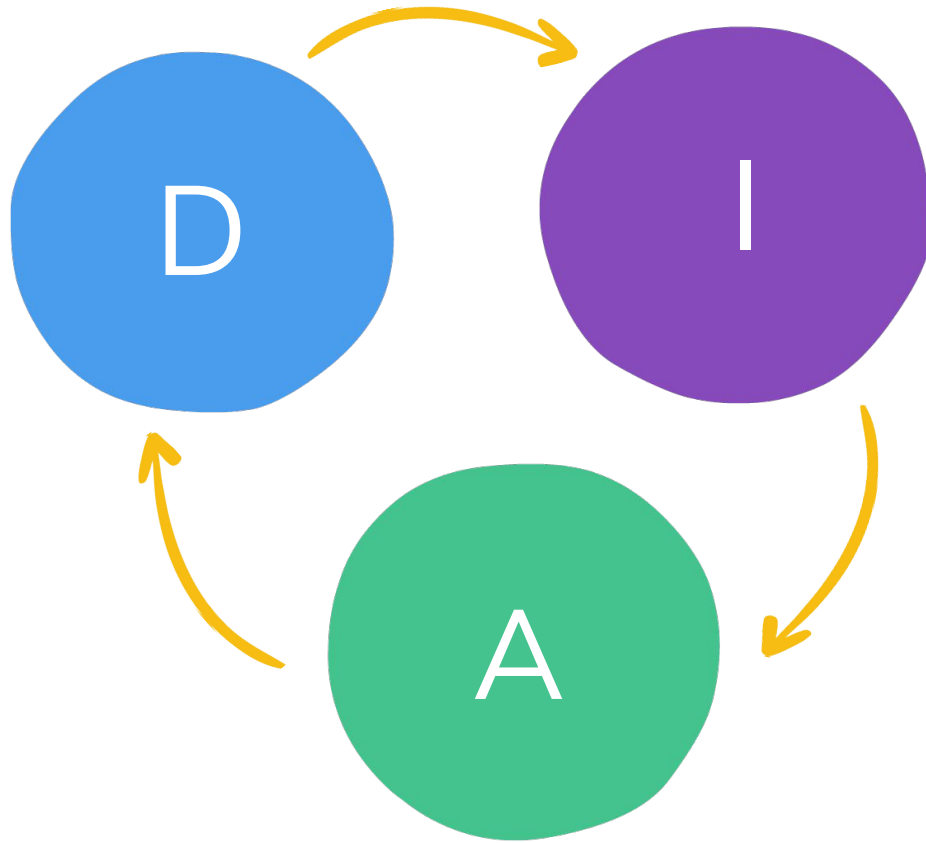


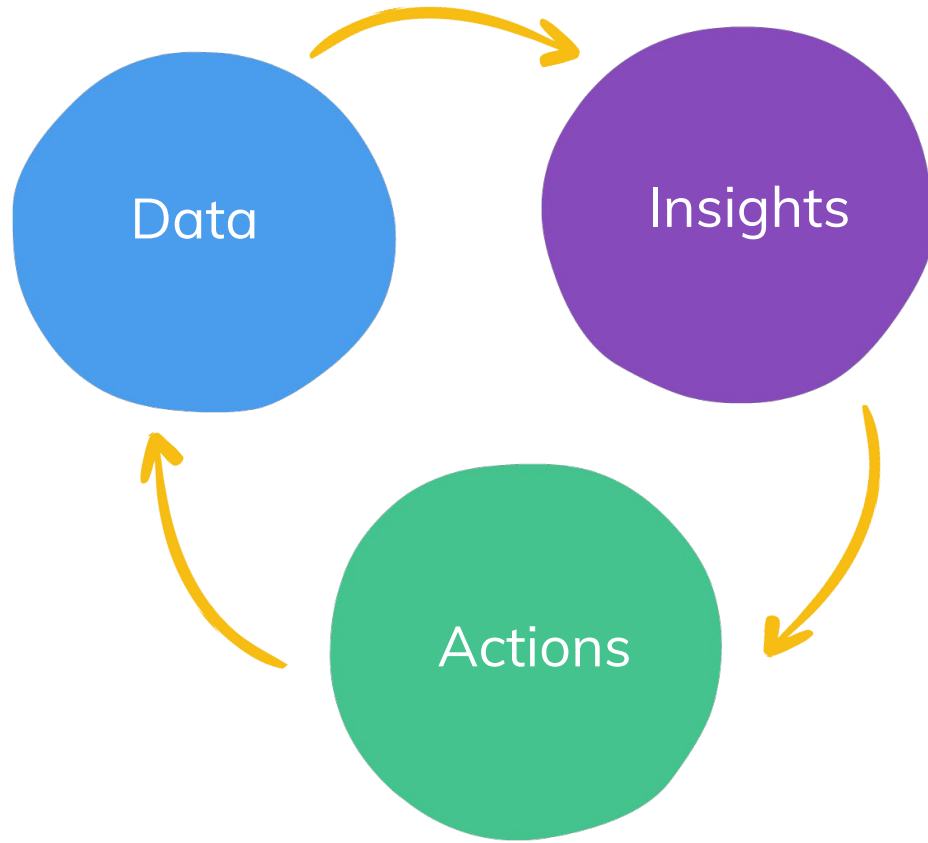
What do these all have in common?



They are all apps

We have integrated apps into all aspects of our lives because they give us information and insights to encourage positive actions to be taken.





Data: the raw numbers

Information: a collection of data points

Insights: *“gained by analyzing data and information to understand what is going on with the particular situation or phenomena.”*

Action: what you do with that insight



<https://online.ben.edu/programs/mba/resources/data-vs-information-vs-insight>

<https://medium.com/riskified-technology/data-vs-insight-the-thin-line-between-good-and-bad-reports-91997d5e9cd>

How do you know your students are learning?

We already get data,
try to make insights,
and take action.

In our traditional classrooms

- paper-based assessments
- large classes
- lack of time
- one point in time

Handwritten student work on lined paper. The page includes a name field, a roll number field, and several math and language problems. Red annotations include a circled $6\frac{1}{2}$ and a circled 10 .

Name: _____
Class: _____
Roll No.: _____

1) $8 + 2 = 10$ ✓

2) The ball is above the table. ✓

3) Uabrrll. ✗

4) $5 \times 5 = 15$ ✓

5) $8 < 4 = \boxtimes$ ✗

6) What comes before?
i) V : P. ✗

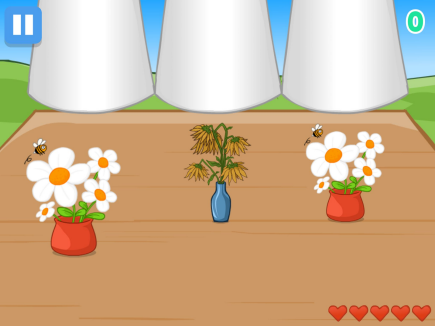
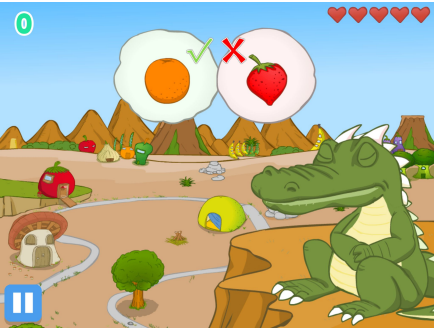
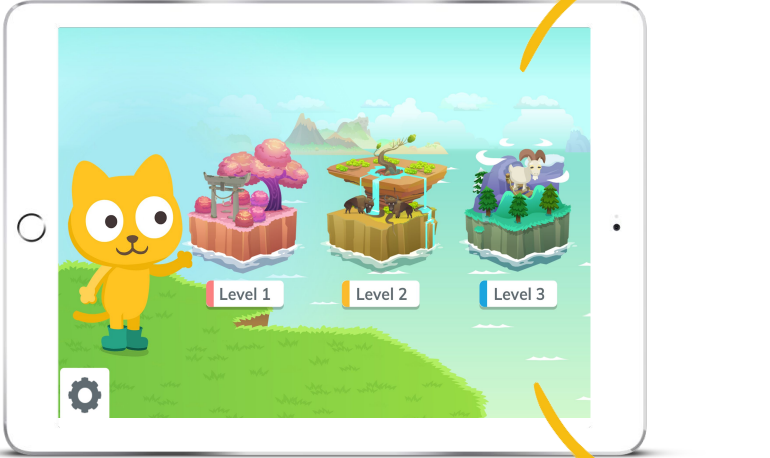
7) What

Handwritten notes in red ink: $6\frac{1}{2}$ and 10 are circled. A red arrow points to the top of the page.

just like a running app gives information on
every step you take

educational apps can you give information on
every interaction in the app

Insights from active language learning



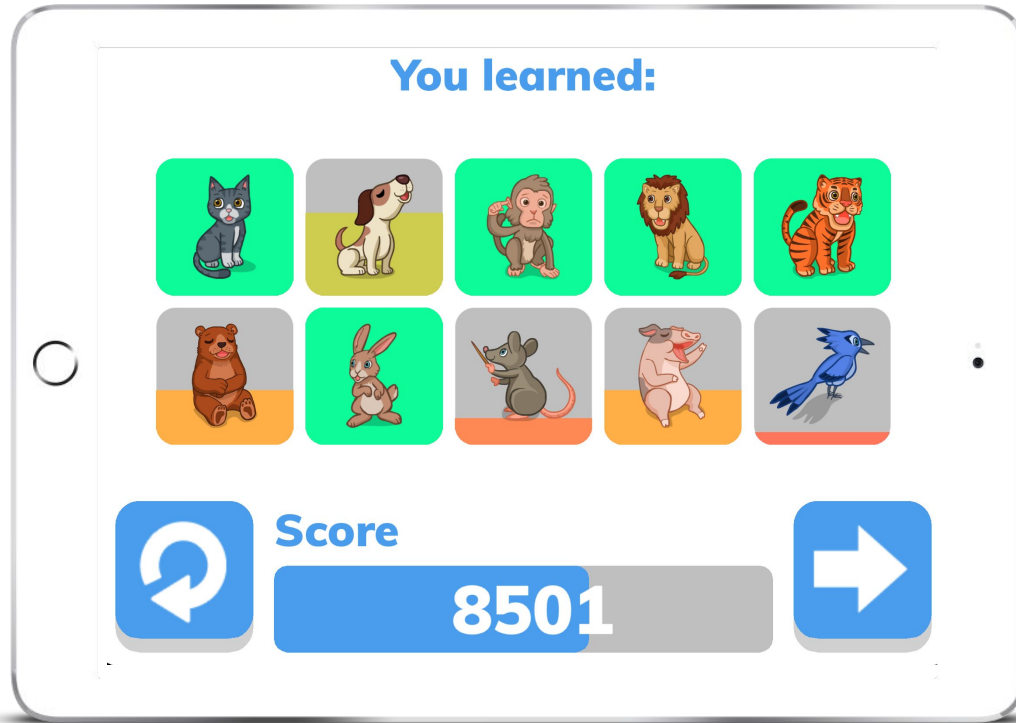
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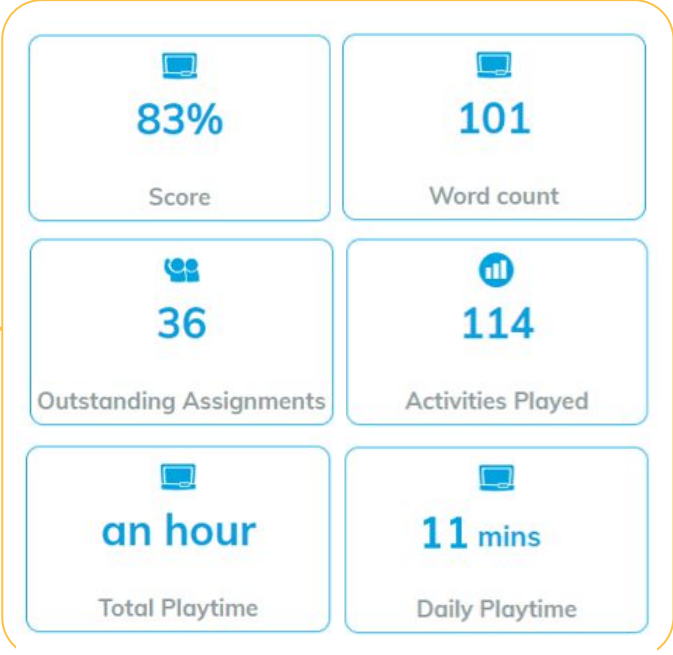
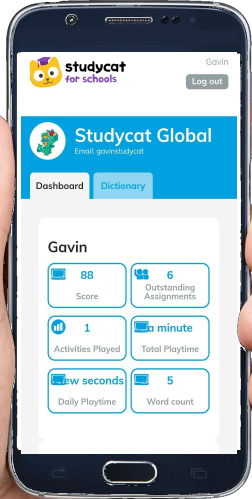


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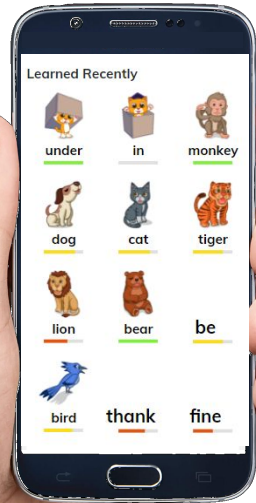
For parents & teachers



How can this help teachers?



taken from many interactions with the target language



Learned Recently



under



in



monkey



dog



cat



tiger



lion



bear

be



bird

thank

fine

What is the **data** showing?

What **insights** can you see?

What **actions** could you take?

Learned Recently



under



in



monkey



dog



cat



tiger



lion



bear

be



bird

thank

fine

how

yes



o



i



u

it

no

is

hi



long



slow



fast



small



short



big



stand up



Miss



May



Mr.



shoes



dress



jacket



rabbit



mouse



year



old



today

What are we doing today?

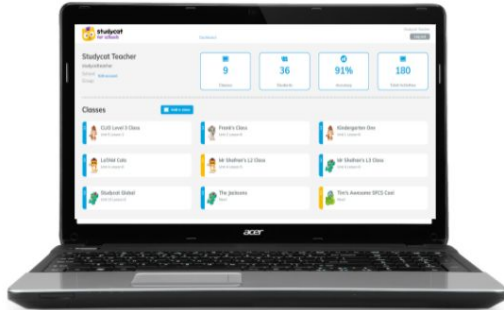
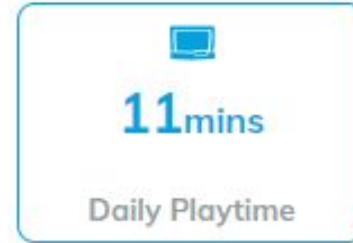
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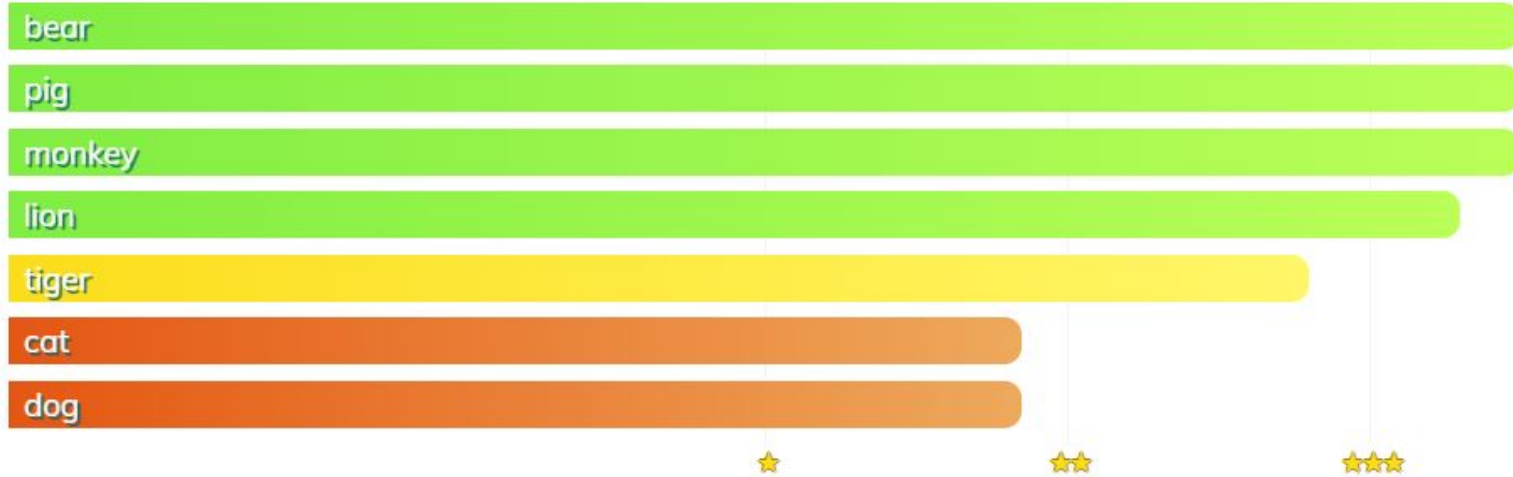
Class
Insights

Language
Learning
Insights

All Students



Whole class accuracy



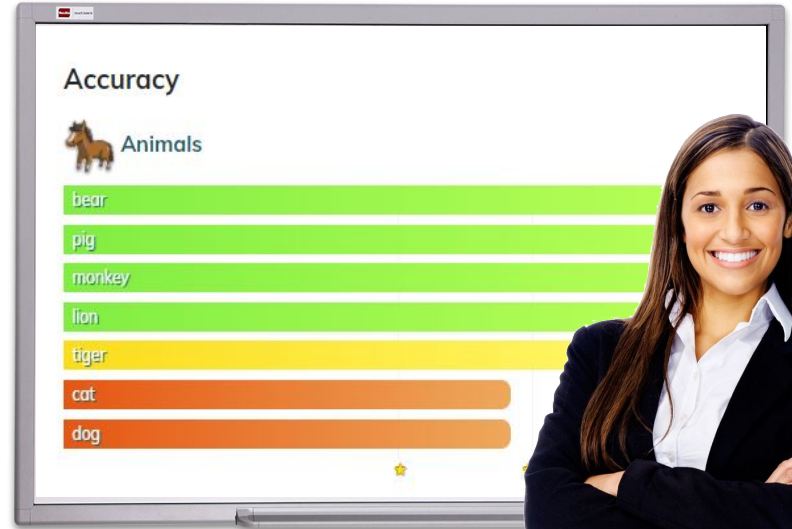
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What **insights** can you see?

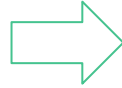
What **actions** could you take?

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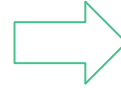
- Focus on cat, dog, and tiger in the next class
- Ask the students to go back play the specific activities again
- Share with the class!



Adjectives

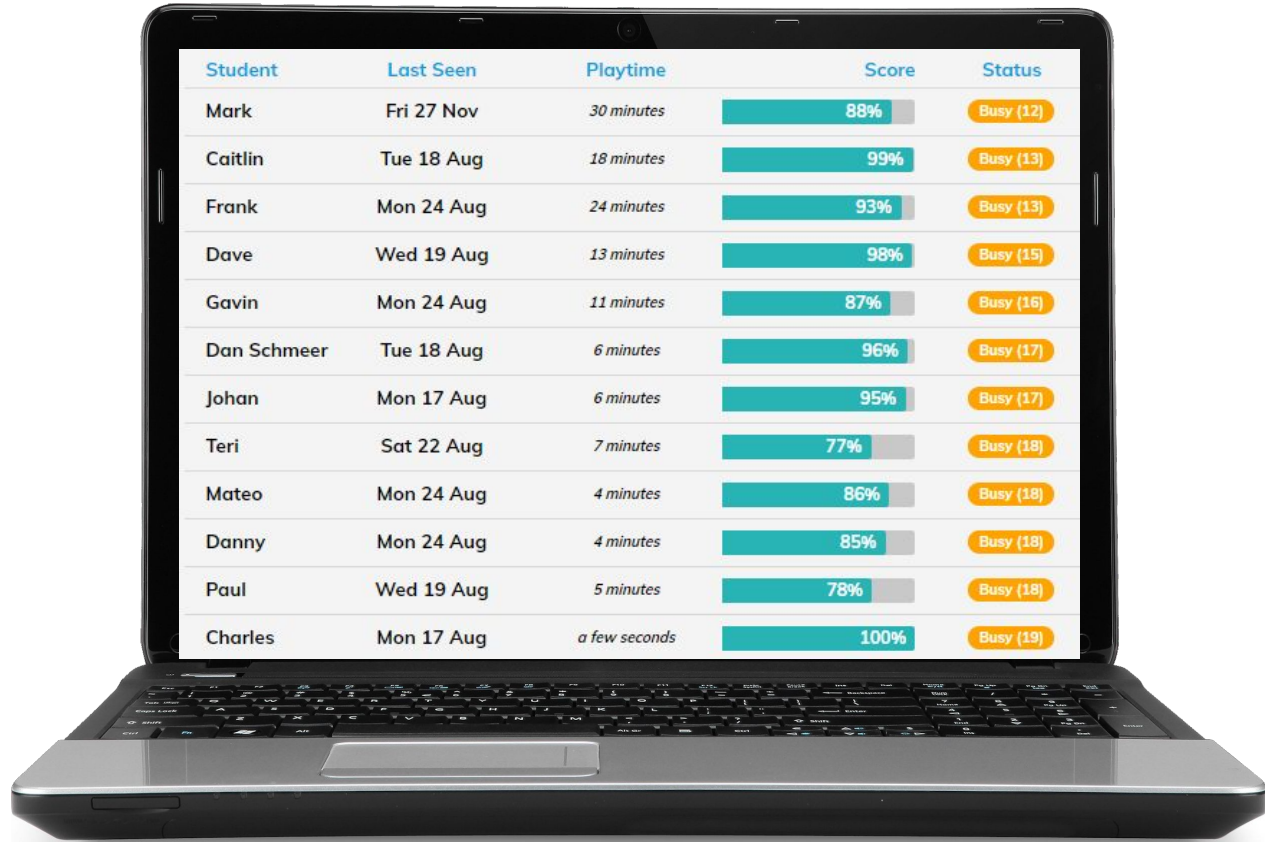


Adjectives



Adjectives

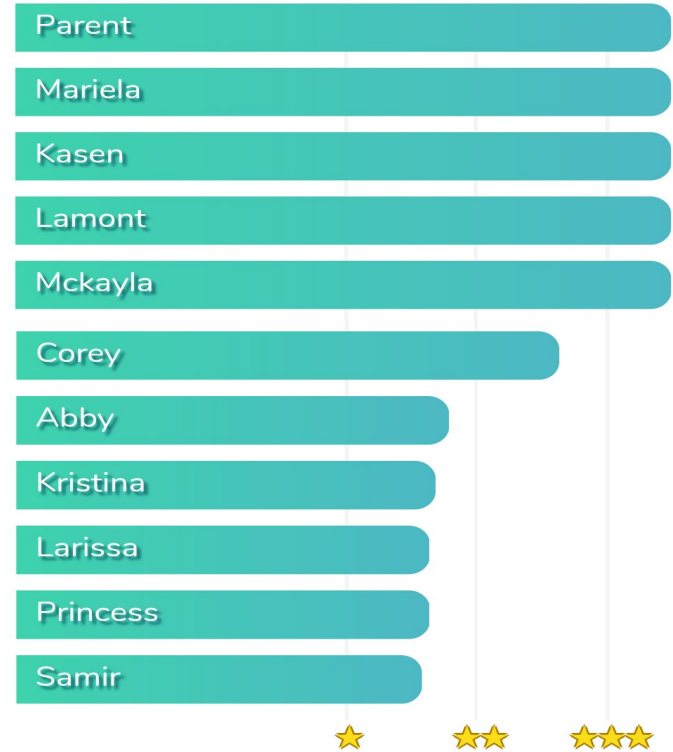




Student	Last Seen	Playtime	Score	Status
Mark	Fri 27 Nov	30 minutes	88%	Busy (12)
Caitlin	Tue 18 Aug	18 minutes	99%	Busy (13)
Frank	Mon 24 Aug	24 minutes	93%	Busy (13)
Dave	Wed 19 Aug	13 minutes	98%	Busy (15)
Gavin	Mon 24 Aug	11 minutes	87%	Busy (16)
Dan Schmeer	Tue 18 Aug	6 minutes	96%	Busy (17)
Johan	Mon 17 Aug	6 minutes	95%	Busy (17)
Teri	Sat 22 Aug	7 minutes	77%	Busy (18)
Mateo	Mon 24 Aug	4 minutes	86%	Busy (18)
Danny	Mon 24 Aug	4 minutes	85%	Busy (18)
Paul	Wed 19 Aug	5 minutes	78%	Busy (18)
Charles	Mon 17 Aug	a few seconds	100%	Busy (19)

What **actions** could you take?

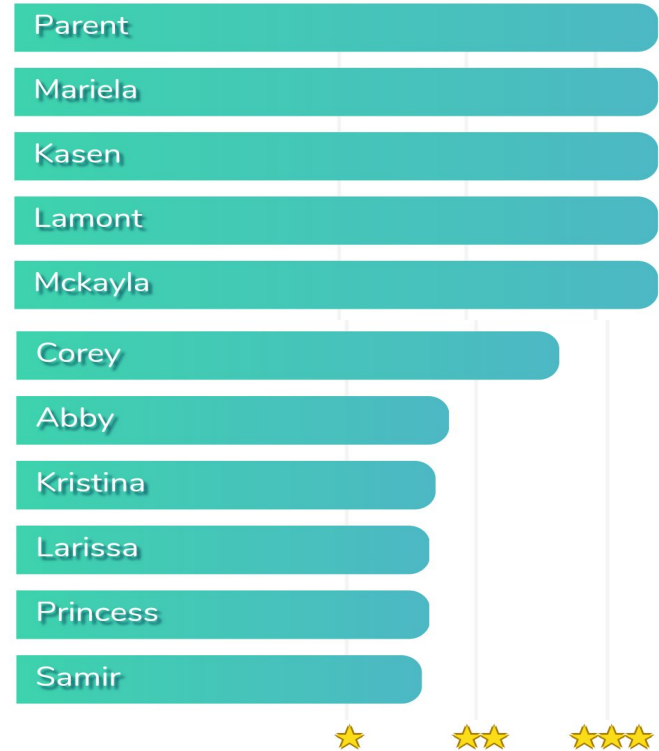
Class Scores



What **actions** could you take?

- group homogeneously
- group heterogeneously
- task-based group work
- differentiate task outcomes
- assign review activities

Class Scores

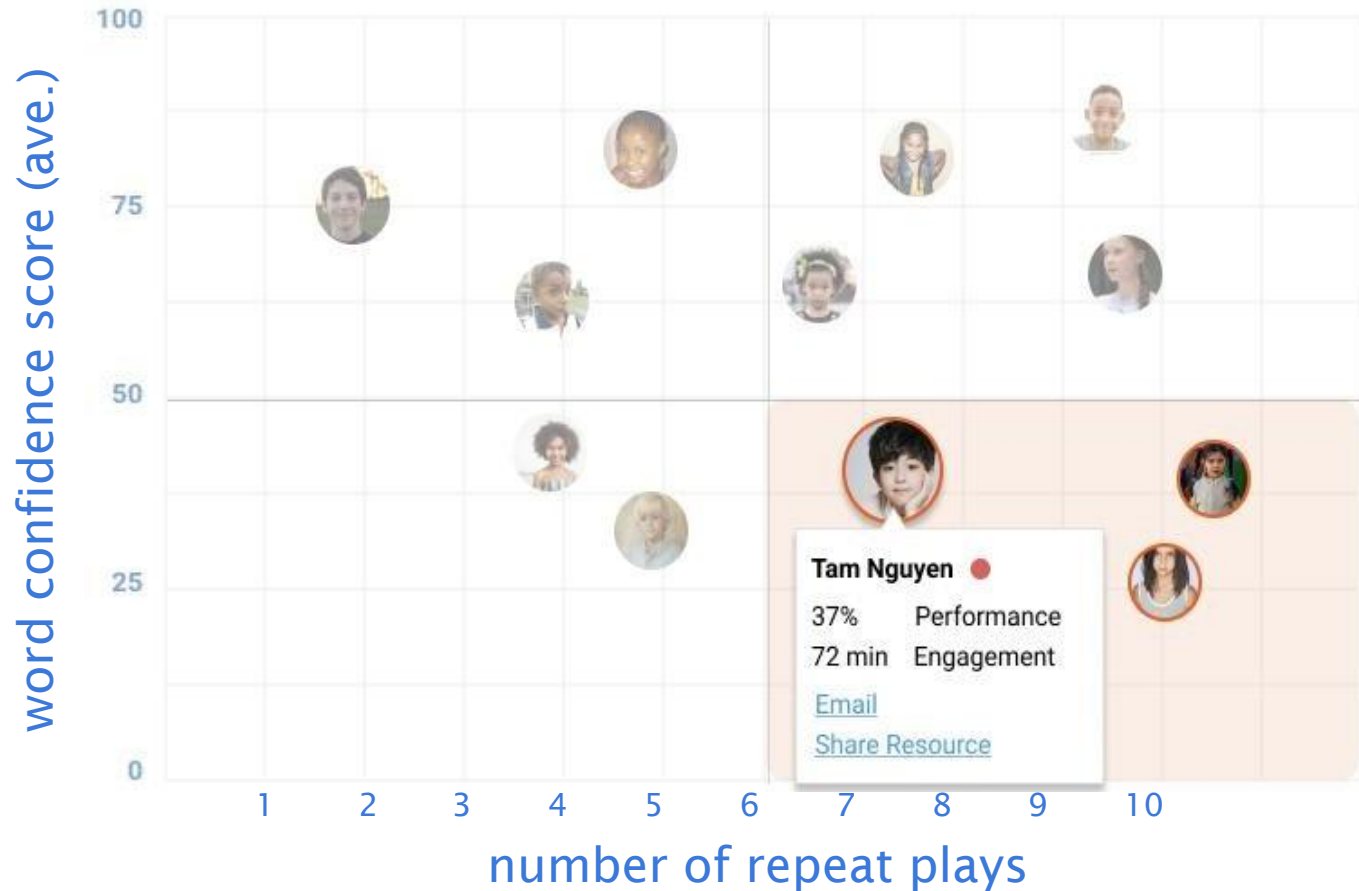


this information is available before my next class

Not just what the students did

but **how** they did it

Which students need my help?





enablinginsights

Adam Black · 1st 

Strategic Advisor, Board Member, Non Exec Director |
Education Technology | Strategy | Business Development |
Innovation | Learning Sciences | Analytics | Leadership

Message

More...



enablinginsights

University of Cambridge



<https://enablinginsights.com/webinar-how-to-design-actionable-edtech-dashboards-for-educators/>

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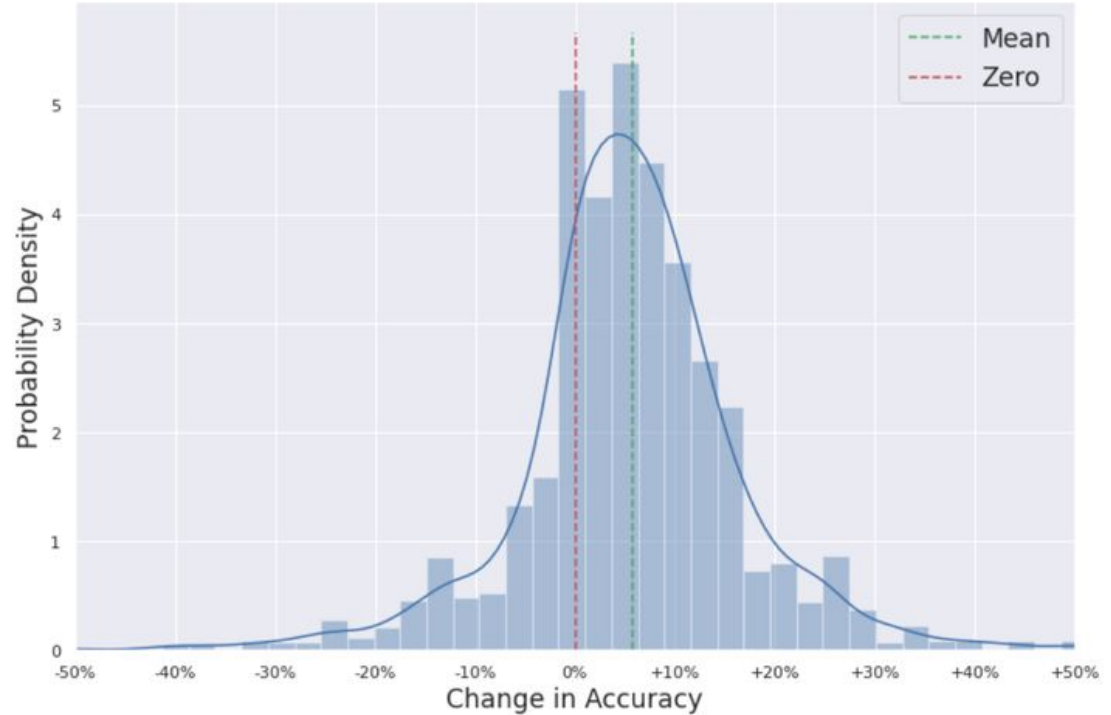
Studycat case studies

Bigger Data

6,700 learners

1.3 million activities played

Learners improve their accuracy by an average of **6% points** per session on quizzes.

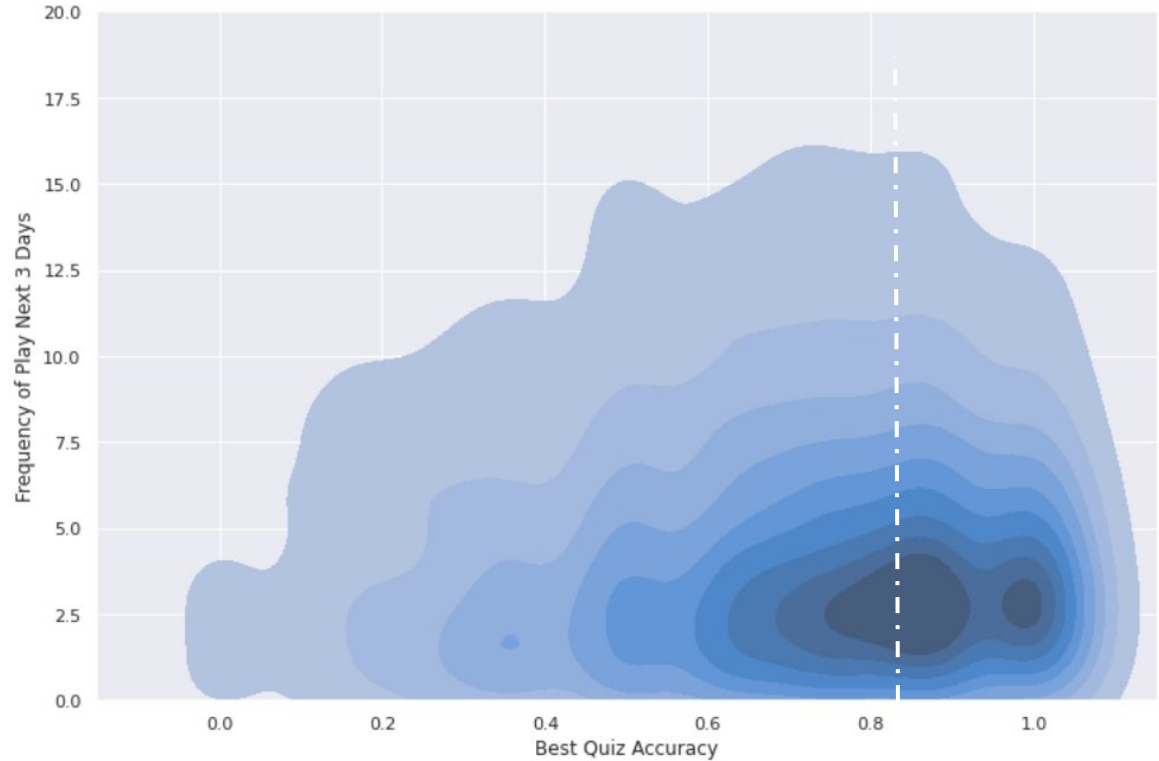
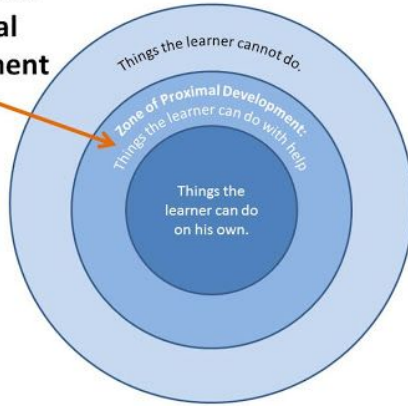


This is data

```
In [10]: data = {}  
with tqdm(total=length(n)) as pbar:  
    for ix, x in iterrows():  
        if x.user not in data:  
            data[x.user] = {}  
        if x.cls_loc not in data[x.user]:  
            data[x.user][x.cls_loc] = []  
        y = x.to_dict()  
        y['ix'] = ix  
        data[x.user][x.cls_loc].append(y)  
        pbar.update()  
  
0%|          | 0/19 [00:00<?, ?it/s]
```

This is an insight

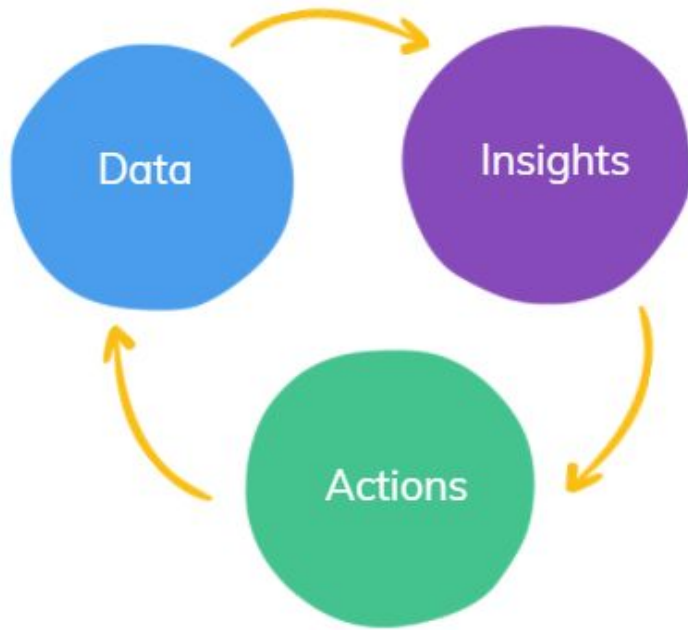
The Zone of Proximal Development



Objective:

insights on language learning from learners around the world





behaviour change



studycat.com

