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Or swimming in insights?

Are you drowning in data?

Or swimming in insights?

Are you drowning in data?

Drowning in data, or swimming in insights?

How edtech must evolve to give you more actionable insights

Dr. Adam Black
Founder, enablinginsights

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studycat

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Or swimming in insights?

Are you drowning in data?

How actionable are student data in current dashboards?

How "actionable" are these student data?

Name	Score (Correct/Possible)	%	Times Taken
⊟ Unit 1 - A			
Unit 1 / Lesson A / Vocabulary	7.00 / 10.00	70.00 %	1
Unit 1 / Lesson A / Listening	5.00 / 10.00	50.00 %	1
Unit 1 / Lesson A / Language Function	5.00 / 10.00	50.00 %	1
Unit 1 / Lesson A / Grammar	6.00 / 10.00	60.00 %	1
Unit 1 / Lesson A / Pronunciation	not taken	0.00 %	0
Unit 1 / Lesson A / Speaking	not taken	0.00 %	0
⊟ Unit 2 - A			
Unit 2 / Lesson A / Listening	6.00 / 10.00	60.00 %	1
Unit 2 / Lesson A / Speaking	27.00 / 30.00	90.00 %	1
Unit 2 / Lesson A / Pronunciation	25.00 / 30.00	83.33 %	1
Unit 2 / Lesson A / Grammar	not taken	0.00 %	0
Unit 2 / Lesson A / Language Function	not taken	0.00 %	0
Unit 2 / Lesson A / Vocabulary	not taken	0.00 %	0

How "actionable" are these student data?

Student	Play Grammar			Play: Vocabulary			Read			Listen			Average		
	🟢	🔵	🔴	🟢	🔵	🔴	🟢	🔵	🔴	🟢	🔵	🔴	🟢	🔵	🔴
Alvarez, Miguel	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%
Aria, Frida	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%
Azoulay, Muhammad	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%
Barrios, Maria	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%
Benzali, Juliana	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%
Class average	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%	2	45%	56%

🟢 Number of tries   🔵 First try   🔴 Last try   Add student   ✖ Delete selected student(s)   🖨 Print   📄 Export

How "actionable" are these student data?

Title	Score	Grade	Completed
Welcome to Your Course	---	---	0/0
Unit 1 Exploring Genius	35%	D	4/10
Unit 2 The Achilles Heel	100%	A	2/2
Unit 3 Early to Bed, Early to Rise	0%	F	0/11
Unit 4 Animal Intelligence	---	---	0/0
Unit 5 The Golden Years	69%	B	18/21
Unit 6 Giving to Others	---	---	0/0
Unit 7 Do Your Homework!	---	---	0/0
Unit 8 Pros and Cons of Gaming	---	---	0/0

How can we make student data more actionable to teachers?

Let's rethink how to make data more actionable for you

Great dashboards empower teachers
by transforming **DATA** into *insights*
that enable you to

understand > **decide** > **action**

Eleven (design) principles to make data more actionable

 understand > decide > action

1. *Tell a story*

2. **Achieve the five-second rule**

3. Reduce noise

4. **Create a 360 degree picture**

5. Provide formative insights

6. `Help strategic planning`

7. Ensure insights are <u>appropriate</u>

8. *Enable efficiency*

9. Close the gap

10. **Amplify impact**

11. Promote self development

Let's look at two examples

Example 1: how creating a 360-degree picture of a learner can empower decision making

Making data more actionable
How a 360-degree view of a learner changes decision making

Student performance: Week 9
⋮ dotted lines = class average

Roster	Performance avg. learning objective score, %
Tam Nguyen ●	37%
Jane Ruiz ●	45%
Imani Russell	75%
Zahra Naser	90%
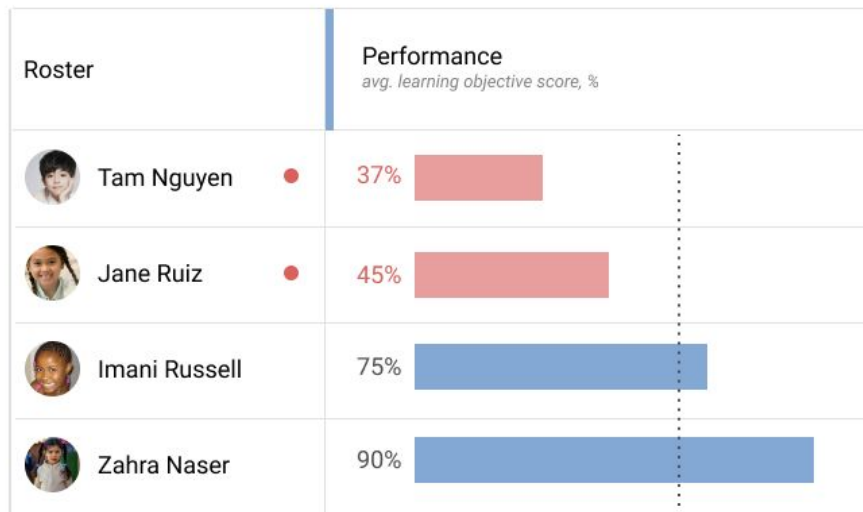
⟵ Tam needs my help!

⟵ Zahra clearly doesn't.
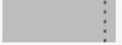
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Making data more actionable
How a 360-degree view of a learner changes decision making

Student performance: Week 9

dotted lines = class average

Roster	Performance avg. learning objective score, %	Behavior Engagement total activity time, mins
Tam Nguyen ●	37%	72 min
Jane Ruiz ●	45%	40 min
Imani Russell	75%	75 min
Zahra Naser	90%	71 min

Tam is putting in the effort!

Ah, but Jane isn't!

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Making data more actionable
How a 360-degree view of a learner changes decision making

Student performance: Week 9
dotted lines = class average

Roster	Performance avg. learning objective score, %	Behavior	
		Engagement total activity time, mins	Study total ebook time, mins
Tam Nguyen ●	37%	72 min	27 min
Jane Ruiz ●	45%	40 min	20 min
Imani Russell	75%	75 min	54 min
Zahra Naser	90%	71 min	42 min

Ah, and Jane isn't using the book either..
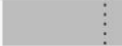
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Making data more actionable
How a 360-degree view of a learner changes decision making

Student performance: Week 9

dotted lines = class average

Roster	Performance		Behavior		
	avg. learning objective score, %		Engagement — total activity time, mins	Study — total ebook time, mins	Perseverance — avg. resubmissions per activity, #
Tam Nguyen ●	37%		72 min	27 min	3.6
Jane Ruiz ●	45%		40 min	20 min	3.5
Imani Russell	75%		75 min	54 min	4.7
Zahra Naser	90%		71 min	42 min	3.1

Hm. Zahra is cruising but gives up easily

Making data more actionable
How a 360-degree view of a learner changes decision making

Student performance: Week 9
dotted lines = class average
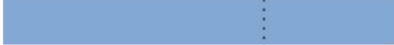
Roster	Performance avg. learning objective score, %	Behavior			
		Engagement total activity time, mins	Study total ebook time, mins	Perseverance avg. resubmissions per activity, #	Confidence avg. post submission, 1-5
Tam Nguyen ●	37%	72 min	27 min	3.6	3.2
Jane Ruiz ●	45%	40 min	20 min	3.5	2.2
Imani Russell	75%	75 min	54 min	4.7	4.2
Zahra Naser	90%	71 min	42 min	3.1	4.8

Making data more actionable
How a 360-degree view of a learner changes decision making

I need to…

Student performance: Week 9
dotted lines = class average

Roster	Performance avg. learning objective score, %	Behavior			
		Engagement total activity time, mins	Study total ebook time, mins	Perseverance avg. resubmissions per activity, #	Confidence avg. post submission, 1-5
Tam Nguyen ●	37%				
Jane Ruiz ●	45%				
Imani Russell	75%				
Zahra Naser	90%				

…**give Tam some 1:1** and build his confidence.

…**get Jane re-engaged** and encourage her.

…**congratulate Imani** and keep her engaged.

…**stretch Zahra** and get her to persevere.

Example 2: how class-level results can be presented to enable efficient and effective interventions for teachers

Making data more actionable
How to amplify your impact

Roster	Performance *avg. learning objective score, %*
Craig Baptista	88%
Haylie Bergson	77%
Greta Botosh	90%
Skylar Carder	● 68%
Marilyn Donin	72%
Alfredo Hurtado	75%
Alena Kenter	● 68%
Omar Lubin	75%
Zahra Naser	90%
Tam Nguyen	● 57%
Jane Ruiz	● 45%
Imani Russell	72%

What's the most efficient and effective action you can take if presented with this data on your class ?

Making data more actionable
How to amplify your impact

Student intervention categories: Week 9

I want to understand my class

y-axis

Performance	⌄
Engagement	
Study	
Perserverance	
Confidence	

versus

x-axis

Performance	⌄
Engagement	
Study	
Perserverance	
Confidence	

Performance — avg. learning objective score, %

100

75

50

25

0

Tam Nguyen ●
37%   Performance
72 min   Engagement
Email
Share Resource

Engaged but struggling
These students are putting in effort, but struggling to master these objectives

Email
Share Resource

0   10   20   30   40   50   60   70   80   90   100   110   120

Engagement
total activity time, mins

What's the most efficient and effective action you can take now **?**

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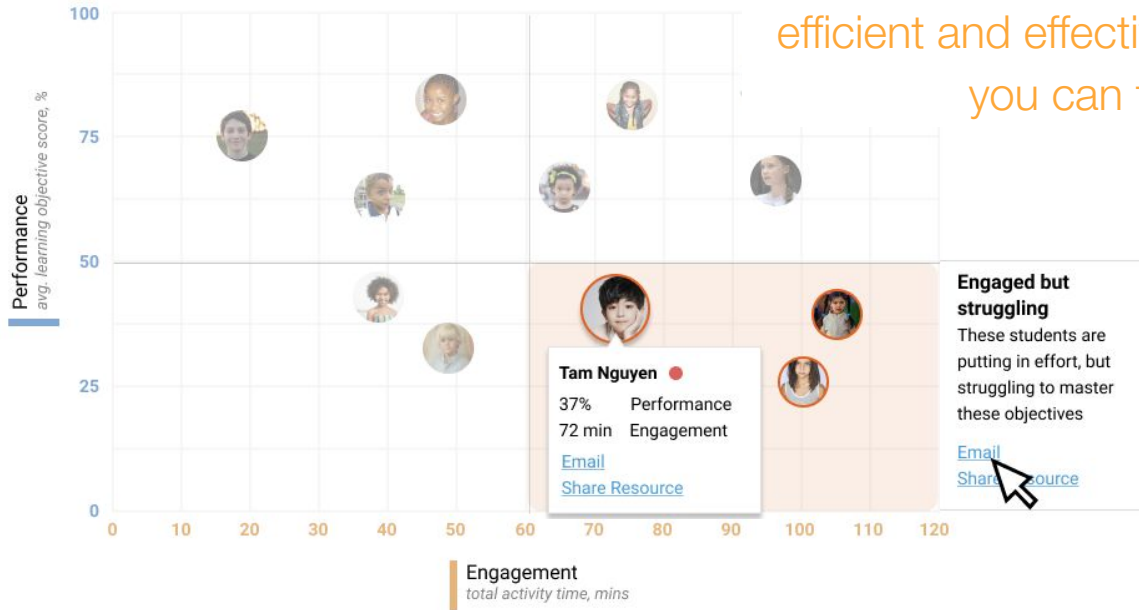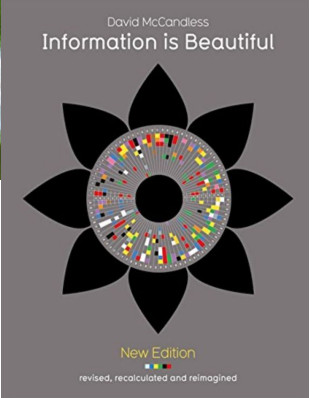
Inspiration

Inspiration

Data viz
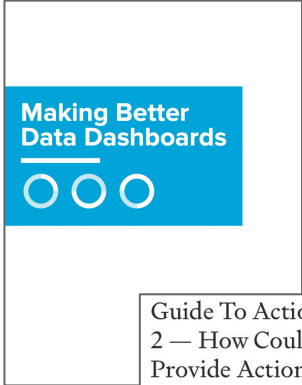
Tufte ↑

McCandless ↓

Dashboards

Making Better Data Dashboards

Duncan ↑

Yin
(Alef Education) ↓

Guide To Actionable Student Data Part 2 — How Could EdTech Companies Provide Actionable Insights For Teachers
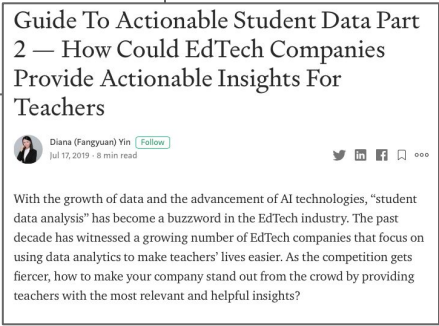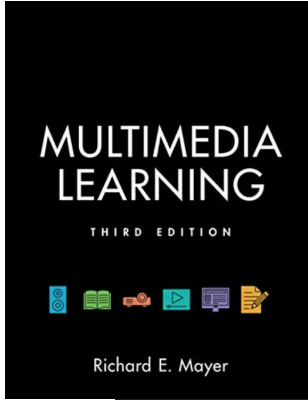
Diana (Fangyuan) Yin Follow
Jul 17, 2019 · 8 min read

With the growth of data and the advancement of AI technologies, "student data analysis" has become a buzzword in the EdTech industry. The past decade has witnessed a growing number of EdTech companies that focus on using data analytics to make teachers' lives easier. As the competition gets fiercer, how to make your company stand out from the crowd by providing teachers with the most relevant and helpful insights?

Learning science

MULTIMEDIA LEARNING

THIRD EDITION

Richard E. Mayer

Bergin
(Macmillan Learning) ↓

Mayer
(UCSB) ↑

Empowering Analytics for Instructors

An approach to analytics for instructors informed by Learning Sciences research

Thank you!

Dr. Adam Black
www.enablinginsights.com