The Myth of the Average Video Transcripts

00:01

please welcome to the TEDx Sonoma County

00:03

stage Todd Rose it's 1952 and the Air

00:15

Force has a problem they've got good

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pilots flying better planes but they're

00:22

getting worse results and they don't

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know why and for a while they blame the

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pilots they even blame the technology

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and they eventually got around to

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blaming the flight instructors but it

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turned out that the problem was actually

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with the cockpit let me explain imagine

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you're a fighter pilot you're operating

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a machine that in some cases can travel

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faster than the speed of sound and we're

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issues between success and failure

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sometimes life and death can be measured

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in split seconds if you're a fighter

01:03

pilot

01:03

you know the your performance depends

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fundamentally on the fit between you and

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your cockpit because after all what good

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is the best technology in the world if

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you can't reach the critical instruments

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when you need them the most but this

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presents a challenge for the Air Force

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because obviously pilots are not the

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same size so the issue is how do you

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design one cockpit that can fit the most

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individuals for a long time it was

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assumed that you could do this by

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designing for the average pilot that

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almost seems intuitively right if you

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design something that fit for the

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average sized person wouldn't it fit

01:56

most people it seems right but it's

02:00

actually wrong and 60 years ago an Air

02:04

Force researcher Gilbert Daniels proved

02:07

to the world just how wrong this really

02:09

is and what it was costing us

02:12

here's how he did it he studied over

02:17

4000 pilots and he measured them on 10

02:21

dimensions of size and he asked a very

02:24

simple question how many of these pilots

02:29

are average on all 10 dimensions the

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assumption was that most of them would

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be did you know how many really were

02:41

zero gilbert daniels proved there was no

02:45

such thing as an average pilot instead

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what he found was that every single

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pilot had what we call a jagged size

02:59

profile right means not it means means

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you're not no one's at the same on every

03:06

dimension and this makes sense just

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because you're the tallest person

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doesn't mean you're the heaviest it

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doesn't mean you have the broadest

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shoulders or the longest torso but this

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is tricky because if every pilot has a

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jagged size profile and you design a

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cockpit on average you've literally

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designed it for nobody so the Air Force

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realized they had a problem and their

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response was bold they banned the

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average meaning that moving forward they

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refused to buy fighter jets where the

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cockpit was designed for an average

03:49

sized pilot and instead they demanded

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that the companies who built these

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planes design them to the edges of

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dimensions of size meaning that rather

04:01

than design for say the average height

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they wanted a cockpit that could

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accommodate as close to the shortest

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pilot and the tallest pilot as the

04:10

technology would allow and today we have

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the most diverse pool of fighter pilots

04:17

ever but here's the thing many of our

04:20

top pilots would have never fit in a

04:23

cockpit designed on average

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so most of us have never sat in the

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cockpit of a 150 million dollar fighter

04:32

jet right but we've all sat in the

04:36

classroom here's what I mean even though

04:41

we have one of the most diverse

04:44

countries in the history of the world

04:46

and even though it's a 21st century we

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still design our learning environments

04:52

like textbooks for the average student

04:56

no kidding

04:57

we call it age-appropriate and we think

05:00

it's good enough but of course it's not

05:03

I mean think about it what does it even

05:06

mean to design for an average student

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because a student is not one-dimensional

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like struggling to gifted students vary

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on many dimensions of learning just like

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they vary on dimensions of size here are

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a few obvious ones and just like size

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each student every single one of them

05:30

has a jagged learning profile meaning

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they have strengths they're average at

05:38

some things and they have weaknesses we

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all do even geniuses have weaknesses but

05:46

if the fighter-pilot example has taught

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us anything it's this if you design

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those learning environments on average

05:56

odds are I'm designing for nobody

05:59

so the real question to me is how do we

06:02

get these adjustable seats for learning

06:05

in the hands of every student as fast as

06:08

possible without spending more money

06:12

here I actually think the Air Force has

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given us the formula for success what if

06:19

we banned the average in education we

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know it destroys talent instead what if

06:27

we demanded that the companies that sell

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these materials into our classrooms

06:32

design them not to the average of

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dimensions of learning but to the edges

06:37

it would be a bold

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it would certainly send a strong signal

06:42

to the market the game's changed but

06:46

trust me if we do this not only will we

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increase the performance of the kids in

06:53

our classrooms today we will

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dramatically expand our talent pool

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because right now there are so many

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students we simply cannot reach because

07:02

we design on average designed to the

07:06

edges and we will reach them and we'll

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get their talent and the good news is we

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don't have to anymore I'm telling you we

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have a once-in-a-lifetime chance right

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now to fundamentally reimagine the very

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foundation of our institutions of

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opportunity like education in ways that

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nurture the potential of every single

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individual and therefore expand our

07:31

talent pool make us far more competitive

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in the world we can do this we know the

07:38

formula and it's time we demand it thank

07:41

you

07:42

[Applause]

07:48

[Music]

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