



UNIVERSIDAD SANTO TOMÁS  
PRIMER CLAUSTRO UNIVERSITARIO DE COLOMBIA

## DEBUNKING A MYTH: Colombian Higher-Education examinations and virtual learning

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Vigencia por seis años






734 million people live  
in poverty (\$1.9 US  
daily)




1625 people die for  
starvation worldwide  
(1 every 48 seconds)



7,700,000,000 inhabitants in  
the world (7.7 billion)



150 million people are  
homeless



23,609 victims of  
malaria daily





# The World needs EDUCATION

Temperature Difference (Fahrenheit)

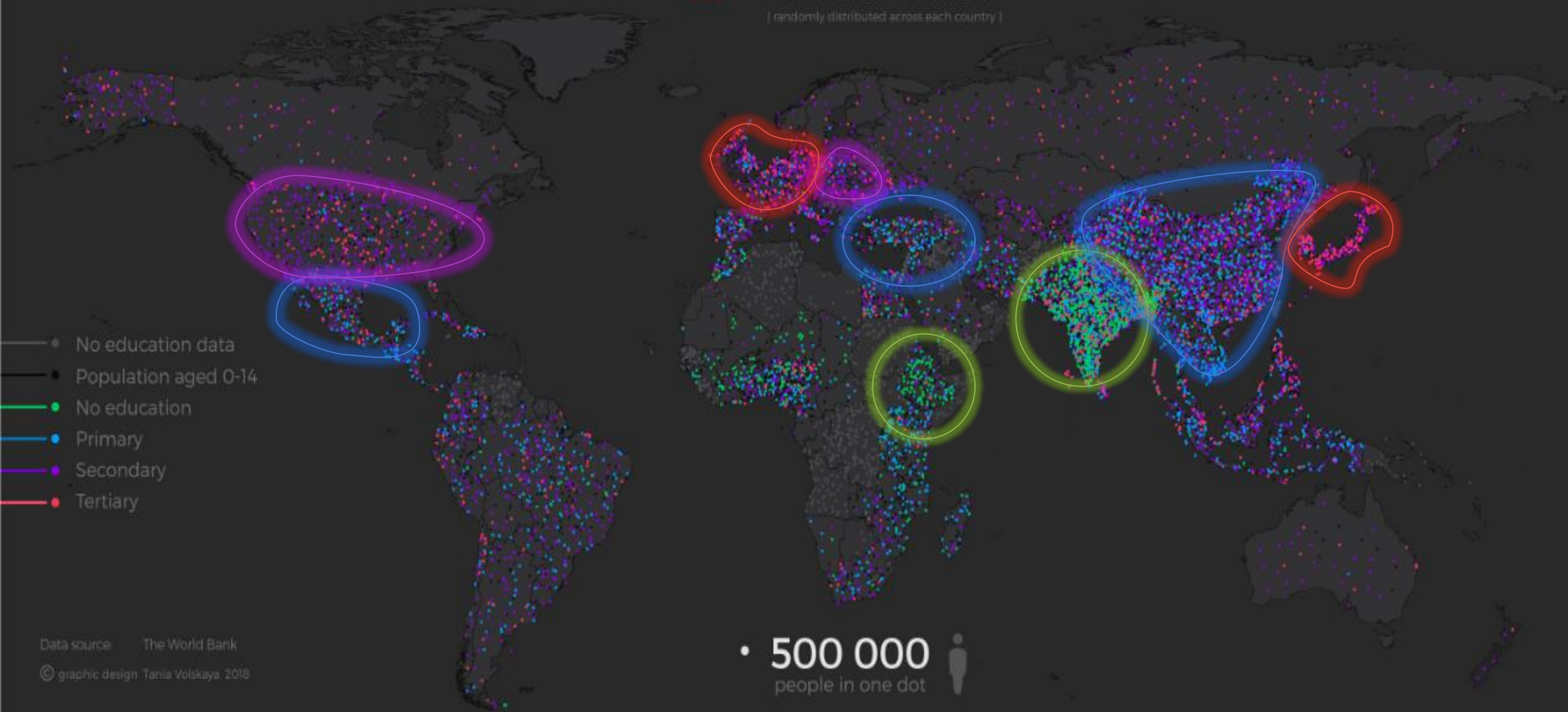


# World Population



## by highest level of **EDUCATION**

( randomly distributed across each country )



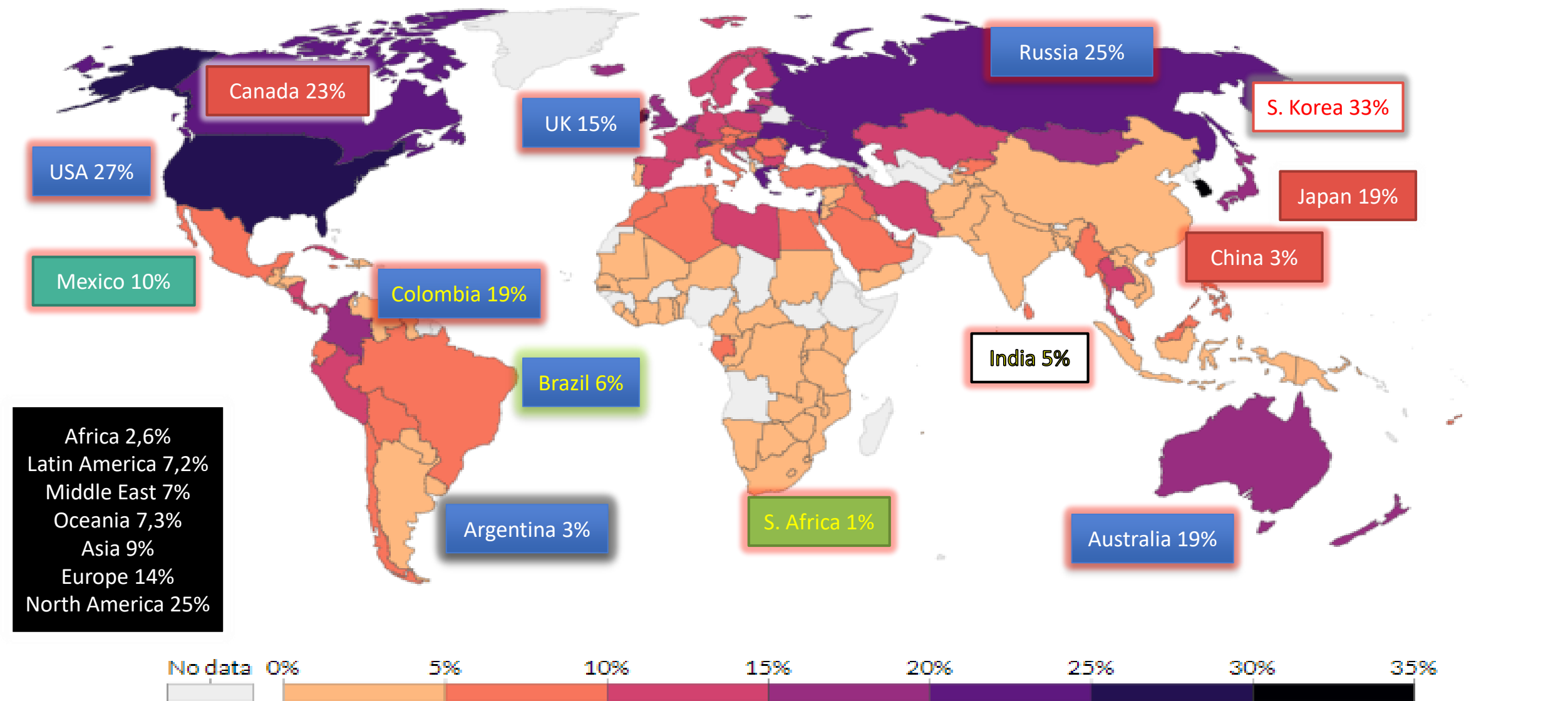
Data source: The World Bank

© graphic design Tania Volskaya 2018

• **500 000**  
people in one dot

# Share of the population with completed tertiary education, 2010

The share refers to the population 15 years and older.



# eLearning as an alternative:

To expand the coverage  
of high-quality education

To foster networking

To measure how  
pertinent, appropriate  
and valid knowledge is

More access with same quality, better options for interaction with a bigger population,  
more focused on students' needs and contexts

To monitor and assess  
through software

To promote and support  
interaction

To personalize  
instruction

Source: CAE (Innovative Learning Solutions (2019):  
Advantages of eLearning for language teachers.

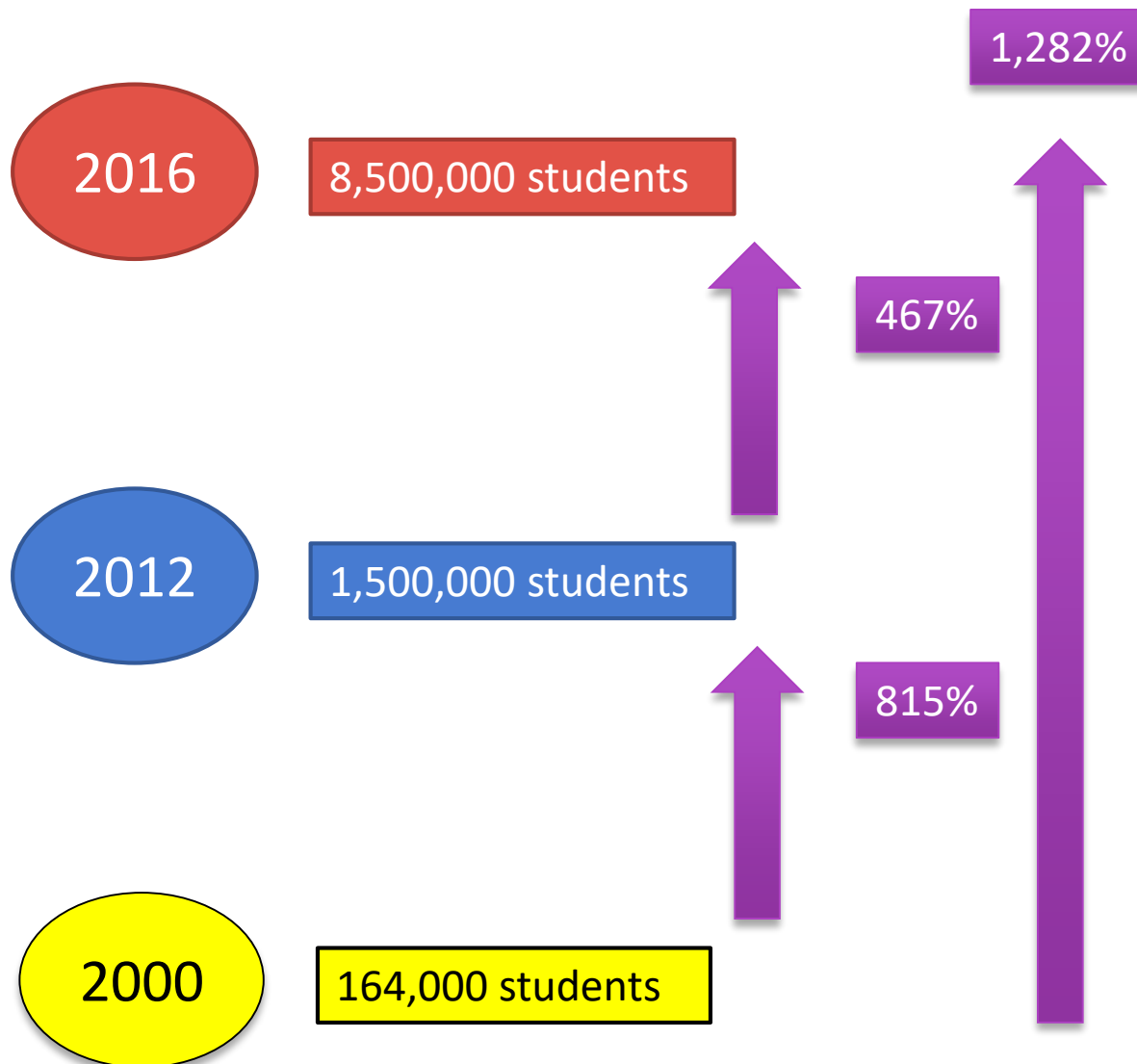


## The 1997-2000 eLearning boom

Cost reduction through:

- Increased automation of development and delivery processes
  - Reduced marginal costs
- Removal of travel and accommodation
- Mass customization / personalization

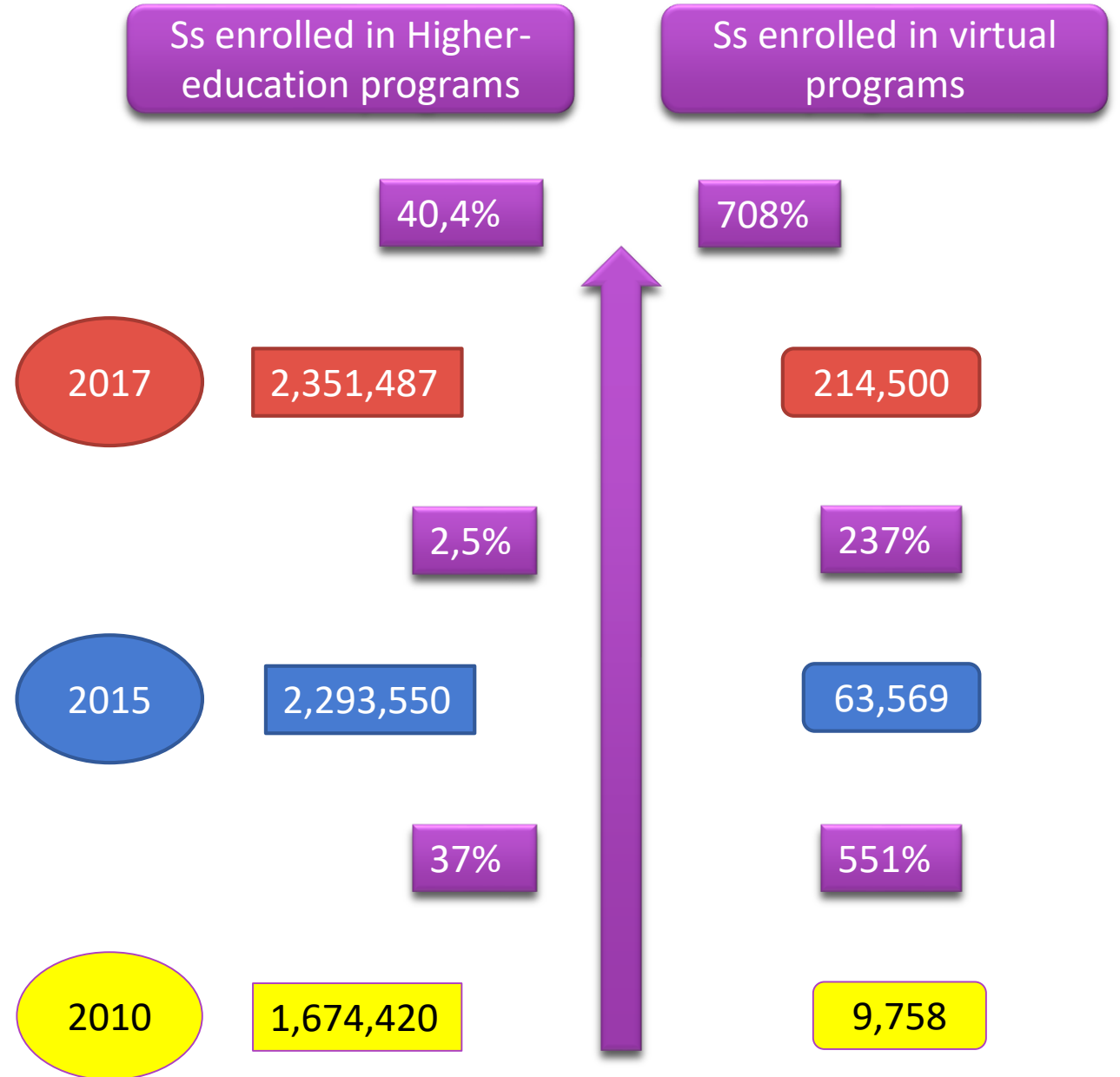
(Remote delivery)



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## More coverage meant also more money...

Global E-Learning market reached \$107 billion in 2015

Global E-Learning market to reach \$325 billion in 2025

Online courses made \$46 billion in 2018.

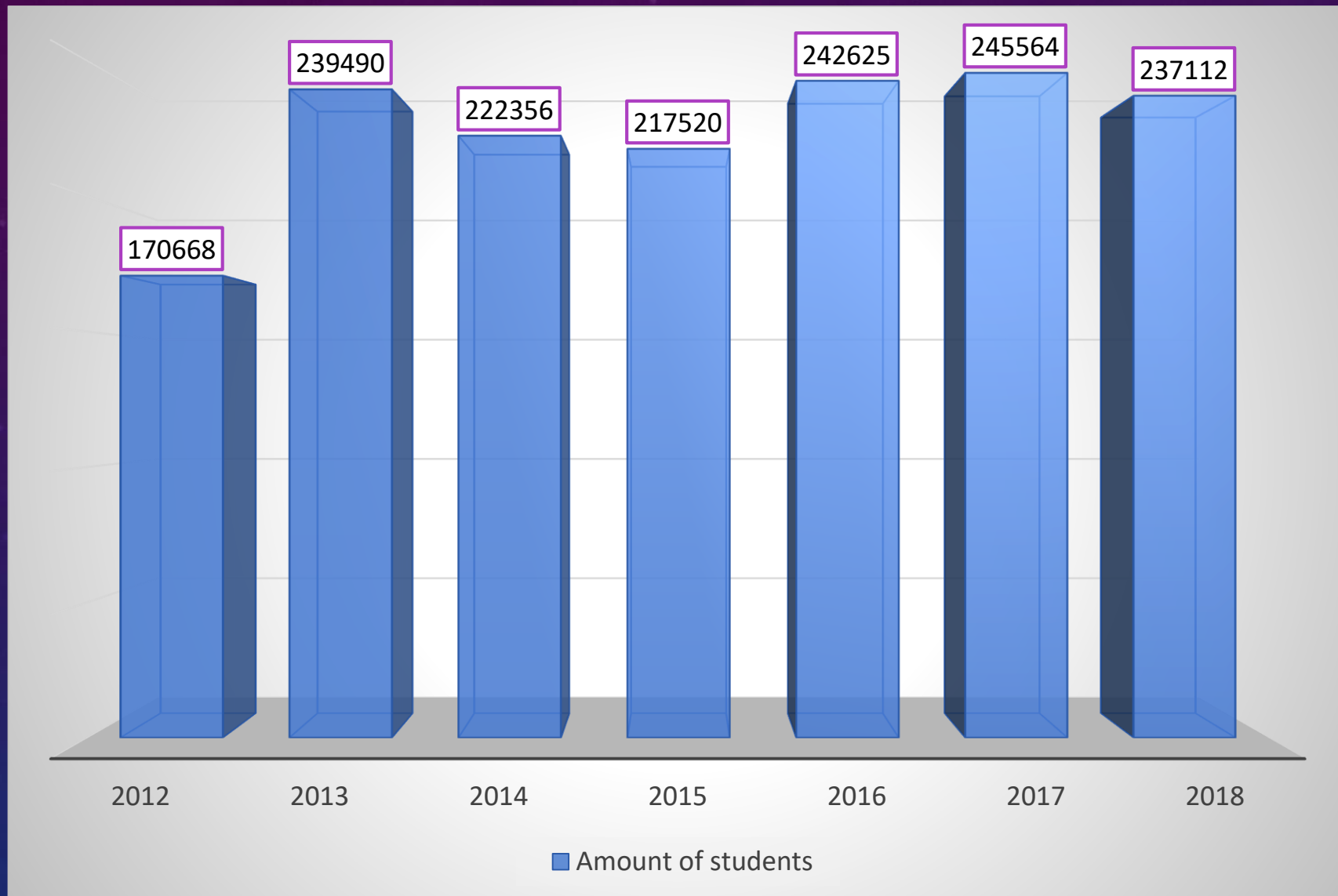
## But, do students learn?

Source: Forbes.com TJ McCue: E Learning Climbing to \$325 Billion By 2025 UF Canvas Absorb Schoology Moodle





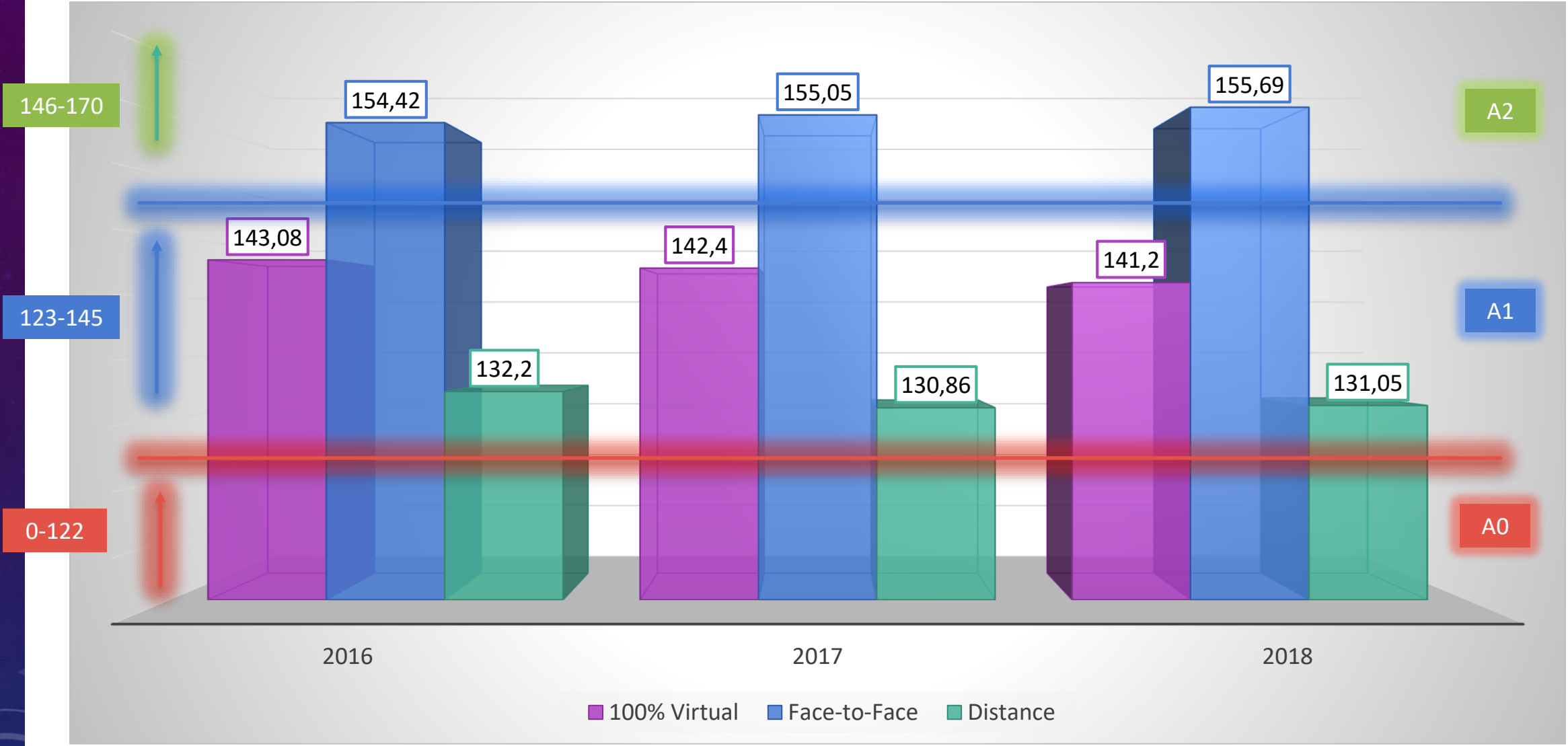


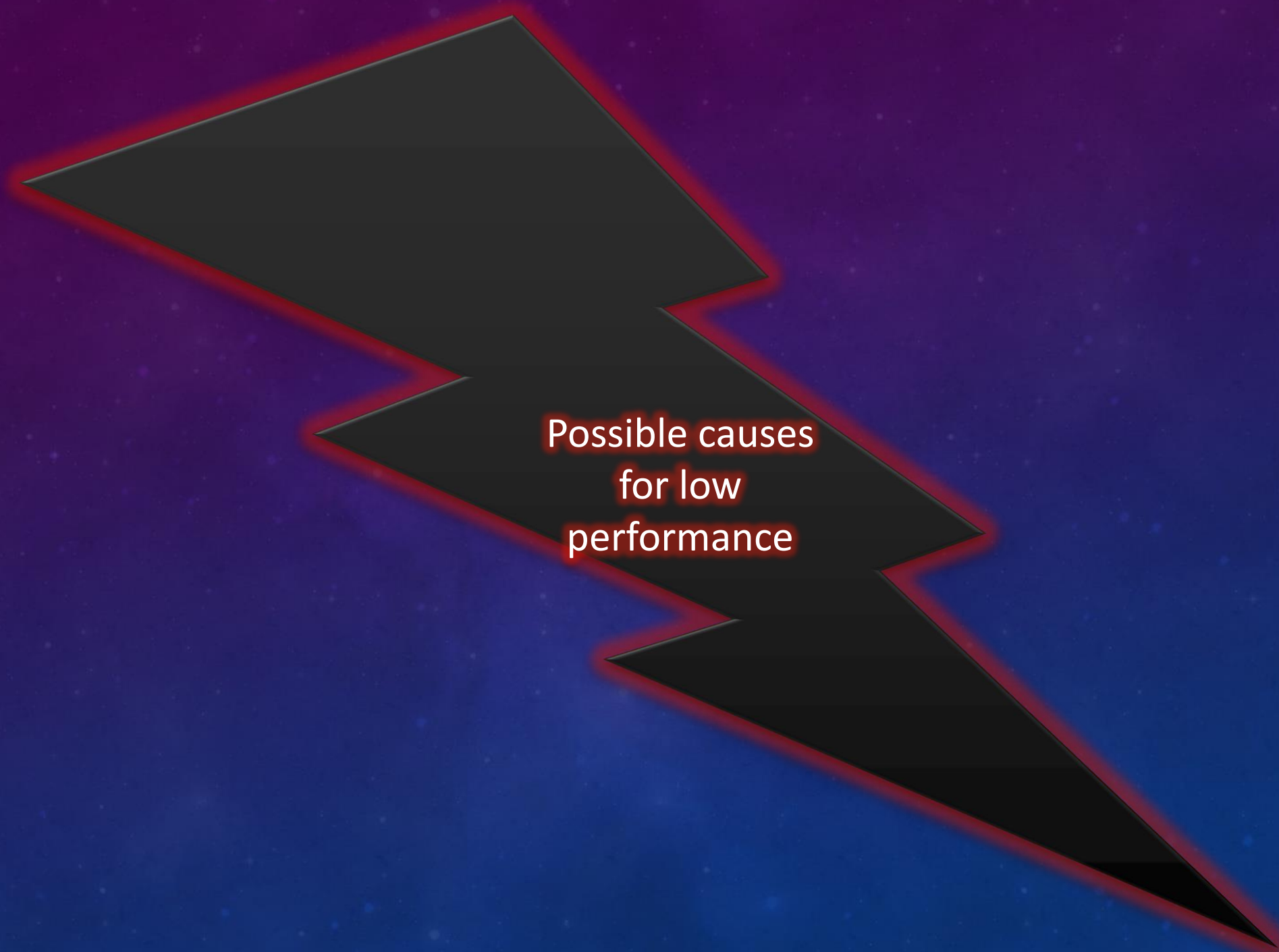




Amount of students who sat the Saber Pro from 2016 to 2018 by educational modality







Possible causes  
for low  
performance

Perception?



# eLearning has been perceived as:

- A less qualified,
- less intense,
- less content-based

Education

- Intended for people with:
- Lesser time
- Mobility restrictions
- Low-income

A poor education for poor people

Student : Teacher ratio	Average time per student a day	University	Country
7,5	1 hour 07	University of British Columbia	Canada
7,9	1 hour 02	Kyoto University	Japan
11,2	40 minutes	Zurich University	Switzerland
39,2	12 minutes	Open University	UK
50,1	10 minutes	University of California, LA (UCLA)	USA
57,1	8 minutes	Fern-Universität	Germany
62,5	7 minutes	Open Polytechnic of New Zealand	New Zealand
311,1	2 minutes	Virtual University Tec de Monterrey	Mexico

Source: OECD (2005): E-learning in Tertiary Education.  
Where do we stand?

Lack of funding?



## The washback from the eLearning boom

Cost increased through:

- High cost of software development
- High demand on face-to-face tutorial support
- Negative correlation between higher enrolments and the quality of the student experience

(The major impact has been on-campus as a supplement to classroom activities)

Infrastructure?

1,200,000  
inhabitants

1700  
municipalities

8096 students

1396 from  
virtual programs



Teachers?





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Produced by a GAN (generative adversarial network)  
[StyleGAN](#) (Dec 2018) - [Karras](#) et al. and Nvidia  
[Original GAN](#) (2014) - [Goodfellow](#) et al.  
Don't panic. Learn about [how it works](#).  
Help me figure out what was learned by this AI [here](#).  
[Click for another person](#) [Link to image](#)



OpenAI revealed a tool that can write cohesive paragraphs of text given minimal human prompting. They call it “deepfakes for text,” referencing the technology that can be used to replace one person’s face over another in a video. As the *Guardian* explained, “the AI system is fed text, anything from a few words to a whole page, and asked to write the next few sentences based on its predictions of what should come next.”

The *Guardian* used the technology—it’s called GPT2, and OpenAI has not released it in full due to concerns about deceptive use “at scale”—to write an entire story about itself. The paper gave the program two paragraphs to begin with. Much like the faces generated by GANs, the story GPT2 wrote is nearly indistinguishable from a human version. GPT2 even fabricated quotes from its own creators (it did the same thing when the *Guardian* fed it the beginning of a piece on Brexit—it created fake quotes from UK Labour leader Jeremy Corbyn).

Credits: Medium Corporation, 2019





Final thoughts



Is virtual learning a tangible, feasible, real option to improve the coverage and quality of Higher-education in Latin America?

Latin American countries would need to:

- Improve their infrastructure (provision of minimal basic commodities and services)
- Trained teachers, acknowledging their work (equal working conditions)
- Implement at the basic levels of instruction strategies that foster autonomous learning and critical thinking

Some research in the field has shown that:

Online students did substantially worse than students in the same face-to-face course: They earned lower grades, were less likely to succeed in subsequent courses, and more likely to drop out.

The profile of students:

Online students are in general:

- older
- more likely to work full-time
- and more likely to be a single parent than those on face-to-face classes.

Sources: <https://Brookings.edu/research/who-should-take-online-courses/>  
The New York Times (2018): Online courses are harming the students who need the most help. Economics section: Susan Dynarski

Not all hope is lost...

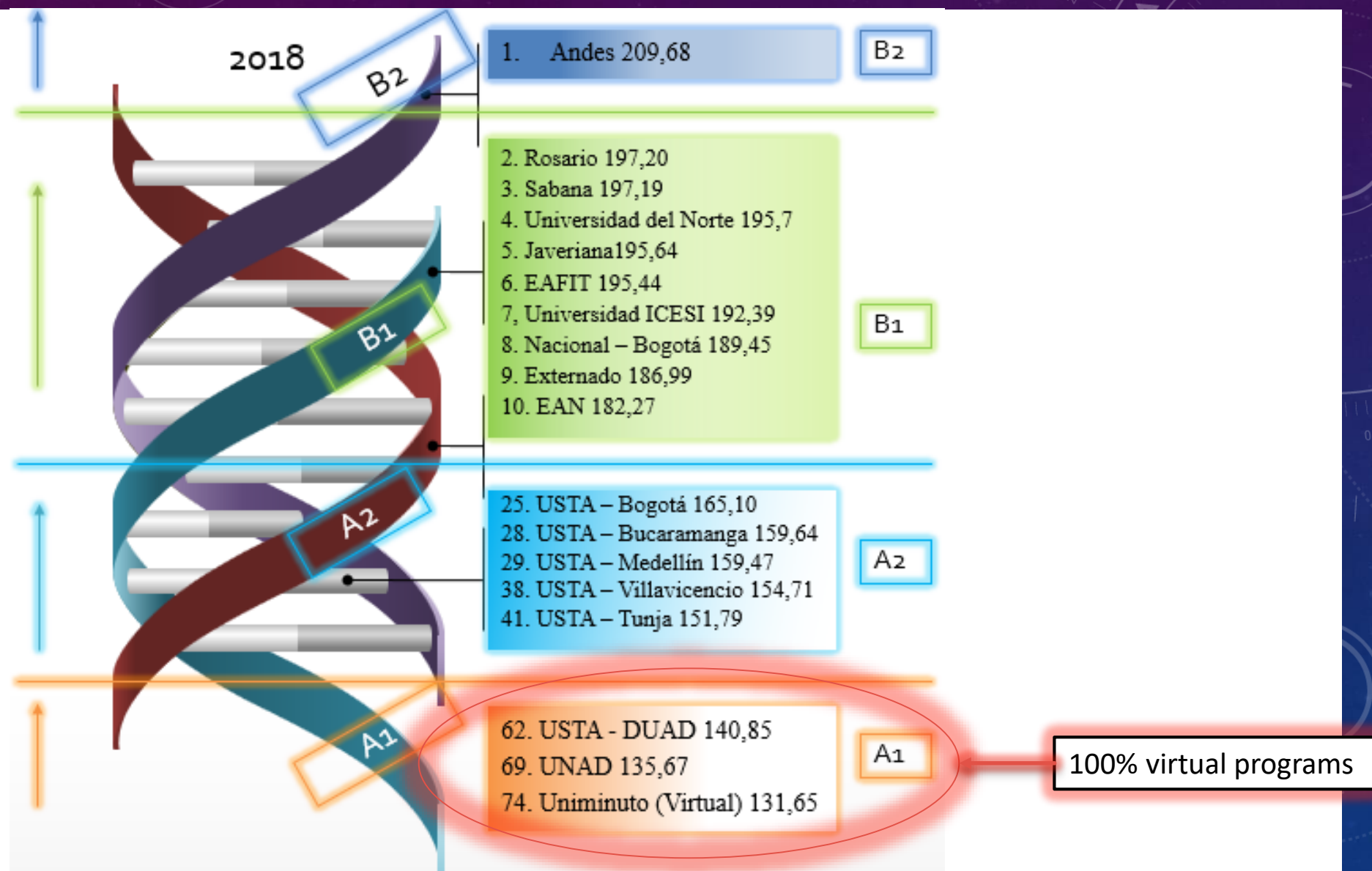


Gráfico 28. Ranking de Universidades conforme a los resultados del módulo de inglés del Saber Pro 2018

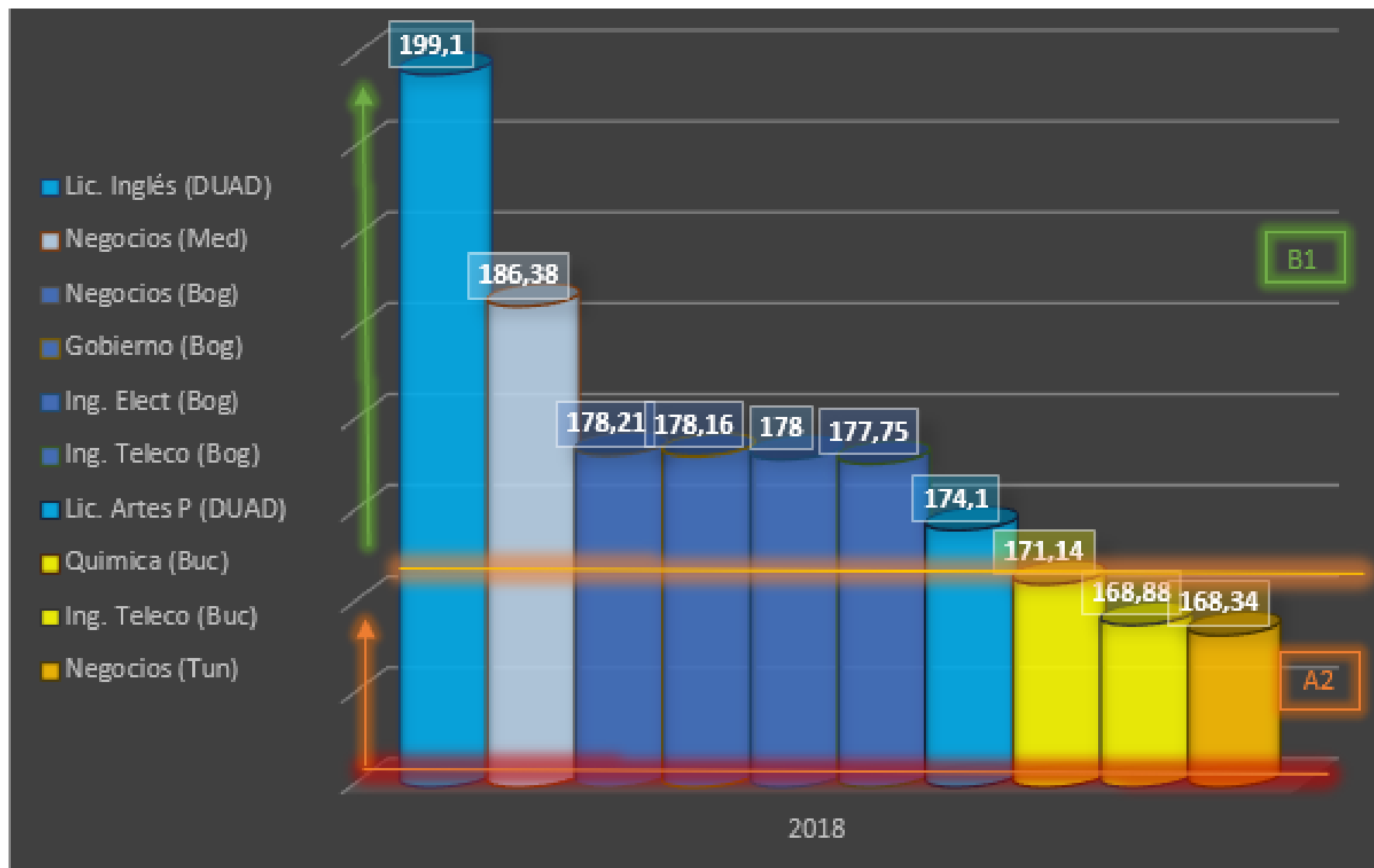


Gráfico 57. Mejores programas académicos de la USTA en el Módulo de Inglés del Saber Pro: 2018



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# Thank you very much!

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