Following the Flow of U.S. Federal Funding

an analysis of the distribution of educational support

OBJECTIVE

With multiple funding programs circulating throughout the United States, we want to gain insights on how educational funding is distributed. This may provide direction toward improving allocations.

METHODOLOGY

Inspired by the interests of Mr. Digits, our team looked to discover a story from the federal funding data. Identifying an appropriate process for this exploration allowed for the use of analytical tools.

OUR PROCESS

Identify Questions ❱ Create Visualizations ❱ Reduce Data ❱ Produce Relationships ❱ Answer Questions

This five-step process was essential in answering the following questions about education allotment:

- How equally is funding distributed throughout the United States?
- What determines the amount and type of funding that certain locations receive?

OUR TOOLS

The use of R allowed for the dataset to be reduced into relevant subsets to further explore. Tableau Public and Excel supplemented our ability to create and display the relationships among the different types of funding.

R | tableau SOFTWARE | Excel

FINDING #1

16 of 44 Data Fields

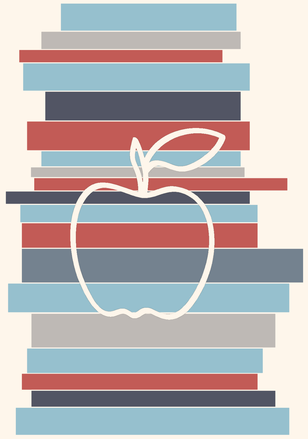
had potential relevance toward interpreting federal funding

256 Programs

of the 1,306 total programs were education related

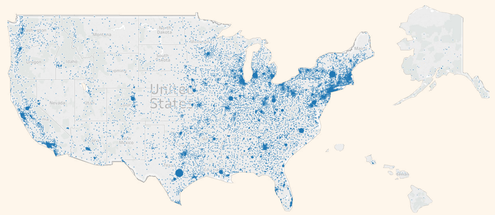
75,000 Data Points

were used to develop the story on educational funding allocation



FINDING #2

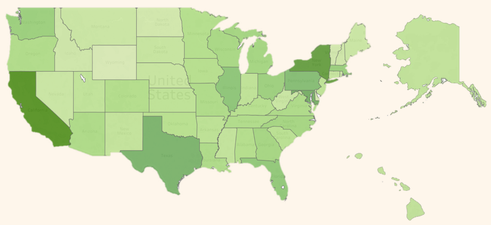
FIGURE 1: Dot Scale Map of Number of Education Based Grants by Zip Code



- A significant number of grants going toward education is sent to ***states' capital cities***
- This data, however, does not show where funding is being dispersed after this point
- A heavily weighted portion of funding programs is headed toward the ***eastern part of the U.S.***

FINDING #3

FIGURE 2: Heat Map for Funding through Project Grants by State



- Project grants showed a similar trend of funding toward capital cities, but it was ***more equally dispersed***
- Research shows that lower-income areas are ***less likely to compete*** for project grants because of the restrictions on resources
- Regression analysis further demonstrates the ***significance of population*** on funding allotment. For each person counted in the U.S. Census, a state receives an estimated ***additional $14.00***

FINDING #4

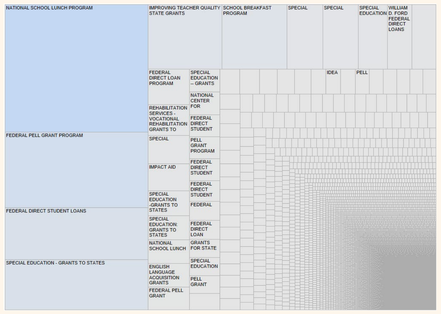


FIGURE 3: Tree Map of Federal Funding Programs within Education

- Demonstration of focus on ***administrative objectives*** rather than educational ones
- Majority of funding heading toward ***specialized programs***, such as post-secondary education, rather than general public education
- The analysis of formula grants suggests a priority of allocation is based on ***population and need***

FINDING #5

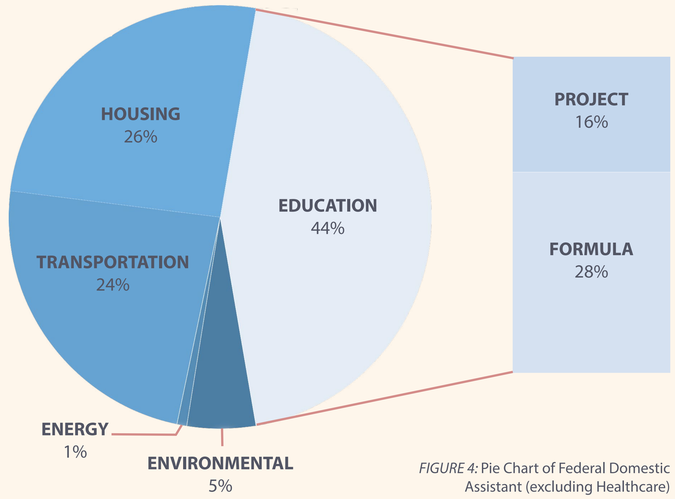


FIGURE 4: Pie Chart of Federal Domestic Assistant (excluding Healthcare)

- Healthcare is nearly ***three times*** as large as education, the second largest funding category, making its scalability problematic
- Excluding healthcare, CFDA spending on education is ***approximately half*** of Federal funding
- Understanding that project grants represent a lower portion of the education-based funding and that competition is high, administrators are spending ***less time*** applying for them
- The algorithms behind formula grants may not be appropriate to maximize the efficiency of federal funding allocation

CONCLUSIONS

- Funding is not necessarily unequally distributed, but the data can only answer some straightforward questions
- Current Federal funding data does not show how money is being used, but rather where it is going
- Due to the specialization of funding programs, such as SPED, Pell Grants, and nutrition, assistance is not distributed to educate the general public
- The merit-based process behind project grants should provide better insight behind appropriate funding recipients.

FURTHER STUDIES

With limitations on governmental data, we suggest exploring the following:

- The investigation of the effects of infrastructure on educational success
- A historical look on the funding process to education, particularly how funding allocation has changed over time
- The understanding of the effects of other governmental sectors on educational funding

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