Congrats to the NYTimes Graphics Design Team on their continuous effort and success in delivering captivating and enlightening visualization to the mass reader base. As part of my graduate course work (bit.ly/QZRJo4) at University of Maryland College Park, I have decided to present a short critique of one of their recent works - Student Debt at Colleges and Universities Across the Nation (nyti.ms/sdebt), an interactive visualization that gives a multivariate picture of the student debt situation over the recent years. This visualization was published as part of the “Degrees of Debt” series.

Assuming the visualization’s main objective to be illustrating the rising cost of college and the burden of debt, the intended audience of this visualization should include students, parents and interested stakeholders who are comfortable with using a browser enabled device. I believe the design team has been successful in conveying their main message as the initial animation, triggered by a single click, clearly illustrate the alarming increase in both graduation cost and tuition for most of the universities. The visualization does a commendable job of first providing an overview, then letting the user zoom & filter to a certain degree, and lastly view certain details on demand.

However, from a user’s point of view, I believe a few adjustments could lead to a more engaging user experience. Further analysis would be possible by plotting other variables on the two axes. For example, the fact that higher graduation rate have a correlation with annual tuition in private schools is not clearly visible. The fixed color labels have not scope for analyzing the other variables and also make the Public / Private filter redundant (figure 1, #1).

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Figure 1: Observations from the visualization

Note: Not an actual page of The New York Times website. The looks and designs are emulated for novelty purposes only.
The axes are not customizable other than the default zooming and panning capability. Furthermore, the default axes for the comparable variables (graduate cost and tuition) are disproportionate as seen in figure 2. This is a major data journalism issue as it can lead the user to believe tuition is increasing at a significantly higher rate compared to graduation debt. The filtering options for the visualization are limited as one cannot drill down based on multiple variables at the same time; nor can arbitrarily select multiple items from the visualization to follow separately or to see details. Lack of dynamic query range sliders for the variables is another area of need here. The useful option for selecting and following a certain university could be further improved by including a shadow tracker like Gapminder or a tracing line. Looking at the bubbles, it is difficult to determine the absolute significance of their size since there is no scale or reference for the sizes either in the chart or in the details (figure 1, #5 & #3). Two export options might have been significant additions: 1) details of selected universities in flat format and 2) the current state of the visualization for sharing.were emulated for novelty purposes only.

![Figure 2: Comparable variables with disproportionate axe](image)

From a usability perspective, the visualization’s performance is praiseworthy. The design is consistent and friendly. The tasks are short, reversible and errorproof. The autocomplete search (figure 1, #2) is useful. Recommended improvements include binding zooming with mouse wheel (e.g. nyti.ms/OIGC8k), removing or dimming the horizontal bar (figure 1, #4) as the top seems separate from the visualization, the y axis label can be made horizontal (figure 1, #6).

Despite the minor improvement areas, I believe this is a powerful visualization that performs as a capable aid for its accompanying articles. Given the audience and constraints, it is a shining example of what an information visualization should be. Thank you Jeremy, Archie, Andrew and Andrew for letting me have one of the most enjoyable homeworks ever! Keep up the good work!

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