

## Learning difficulties for children, is it an even playing field or does funding create more opportunities?

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Learning difficulties for children from ages 5-18 can become a fundamental barrier for a normalised education. This barrier or learning difficulty is not primarily attributed to low intelligence, sensory problems, emotional instability, parenting issues or the teaching capabilities of their school. However, it may be associated with medically diagnosed problems such as attention disorders (e.g. AD-HD), a Pervasive Developmental Disorder (e.g. Asperger's Syndrome) or a Communication Disorder (e.g. Specific Language Impairment) (Learning Difficulties Coalition NSW, 2015). The public schooling system in NSW cater to children with these disabilities, however, not all children receive the same benefits. The underlying issue that surrounds the public school system is the politically driven funding schemes that become part of election campaigns, where parties use promises of funding as leverage and support for their agendas (Karp, 2017). The inherent issue with this type of funding raises concern for not only all the students that will be affected, but especially the students with learning difficulties that do not attend specialised schools that cater to their needs.

This report aims to explore if there is any correlation between household income and specialist support classes for schools. More specifically to investigate the amount of voluntary donations made by parents to the schools and the necessary payments for elective subjects that are beyond the minimum requirements of the curriculum.

school_name	number_classes
Glenroi Heights Public School	6
Melville High School	5
Canobolas Rural Technology High School	5
Vincentia High School	5
Lithgow High School	5
Fairvale High School	5
Wagga Wagga High School	5
Bomaderry Public School	5
Sir Eric Woodward Memorial School	5
Katoomba High School	5
Casino High School	5
Woy Woy Public School	5
Busby West Public School	5
Warrawong High School	5
Henry Kendall High School	5
Picton High School	5

*Figure 1. NSW Public Schools with 5 or more classes that are specialised to support students with learning disabilities, sorted by number of classes.*

In NSW there are 15 non-specialised public schools that have five or more classes specially designed to support children with learning disabilities. These disabilities cover a spectrum of both mental and physical health disorders, all of which not only impact the students themselves, but their peers directly.

school_name	postcode	town_suburb	operational_directorate	principal_network
Sir Eric Woodward Memorial School	2075	St ives	Macquarie Park	Pittwater
Fairvale High School	2165	Fairfield west	Ultimo	Fairfield
Busby West Public School	2168	Green valley	Ultimo	Liverpool
Henry Kendall High School	2250	Gosford	Macquarie Park	Mooney Mooney
Woy Woy Public School	2256	Woy woy	Macquarie Park	Brisbane Water
Melville High School	2440	Kempsey	Tamworth	Macleay Valley
Casino High School	2470	Casino	Tamworth	Clarence Valley
Warrawong High School	2502	Warrawong	Wagga Wagga	Lake Illawarra North
Vincentia High School	2540	Vincentia	Wagga Wagga	South Coast
Bomaderry Public School	2541	Bomaderry	Wagga Wagga	Shoalhaven
Picton High School	2571	Picton	Ultimo	Wollondilly
Wagga Wagga High School	2650	Wagga wagga	Wagga Wagga	Wagga Wagga
Katoomba High School	2780	Katoomba	Macquarie Park	Blue Mountains
Lithgow High School	2790	Lithgow	Wagga Wagga	Lithgow
Glenroi Heights Public School	2800	Orange	Wagga Wagga	Orange

Figure 2. The schools from Fig 1 sorted by the postcode of the school.

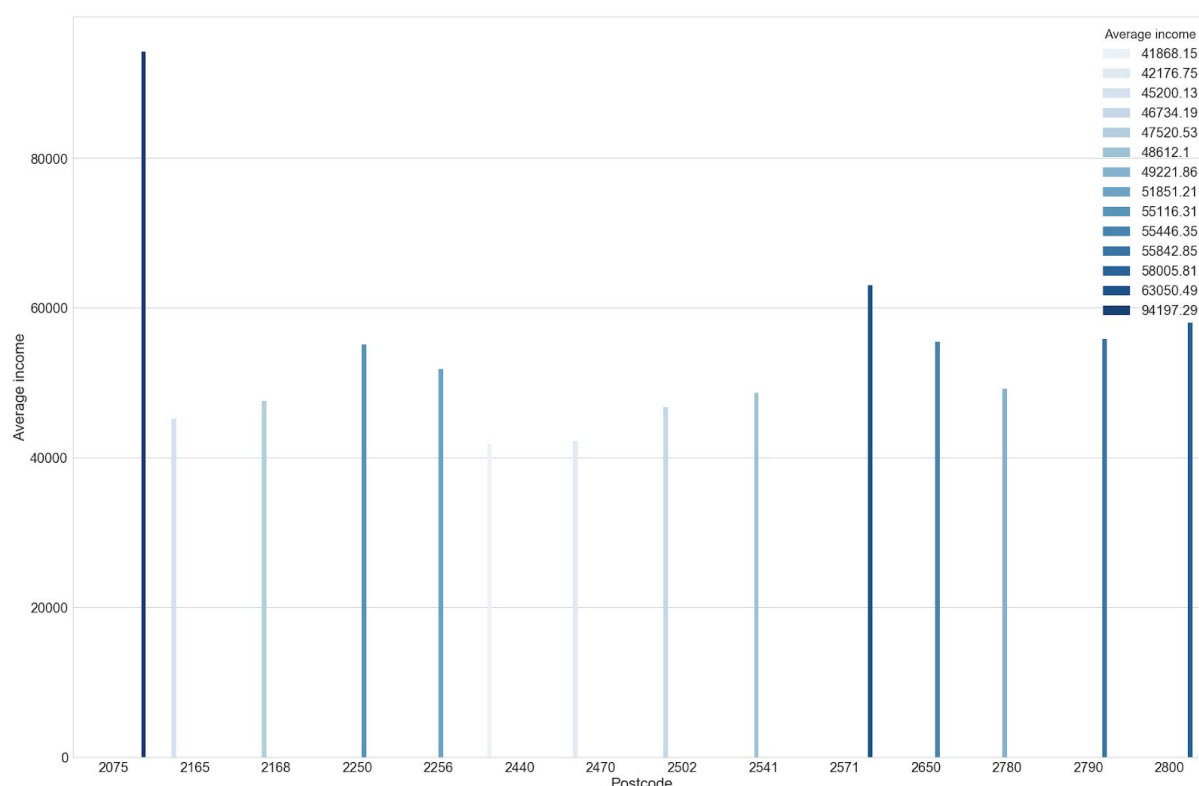
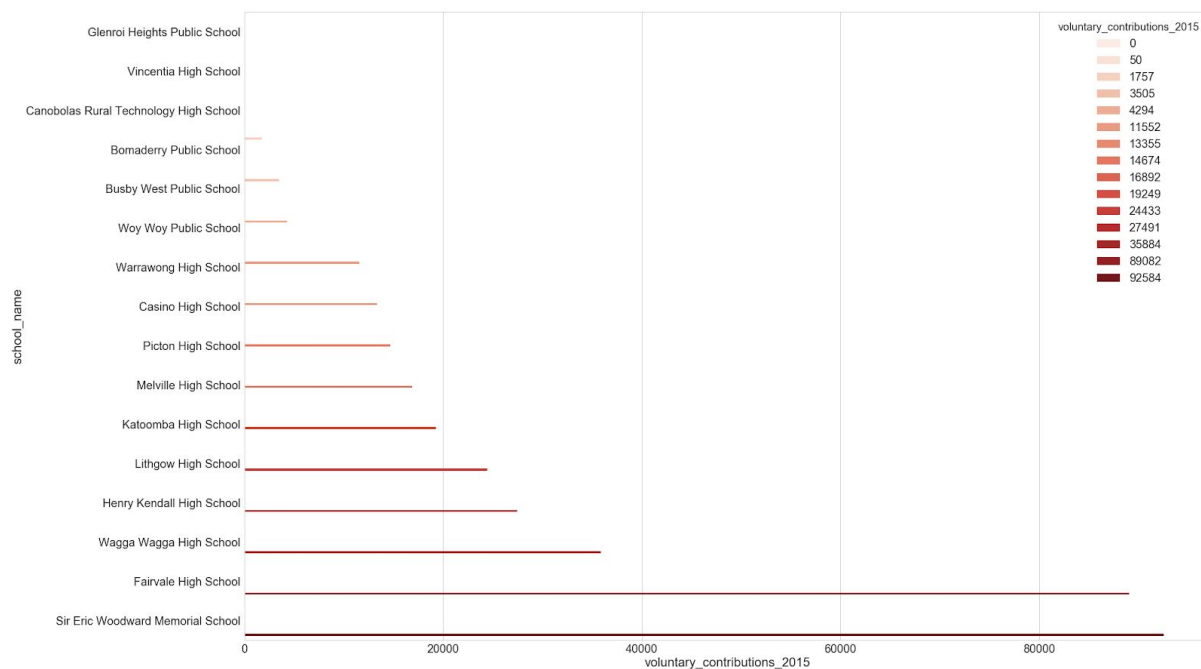
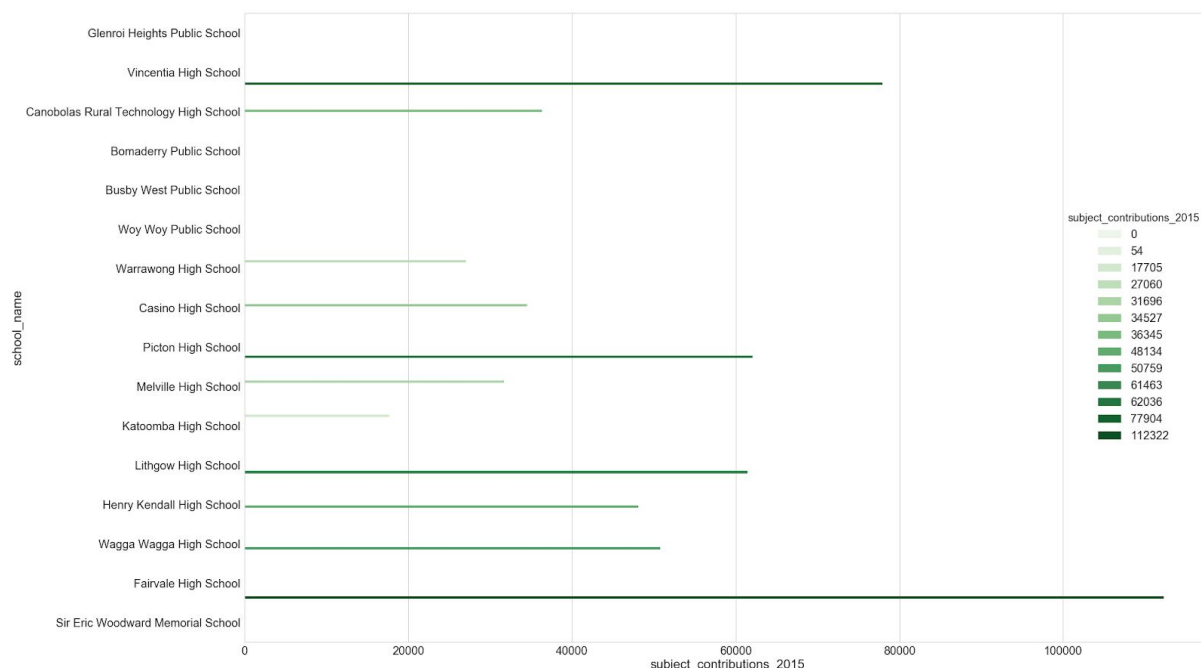


Figure 3. The average income of the individuals that reside in the postcode areas of the schools from Fig 2.

In 2015 the average income for all tax paying individuals in NSW was \$63,279.84. From Figure 3, it can be observed that all suburbs except one fall under the average for individual income. This suggests that the schools that have the most disability classes reside in suburbs with lower socioeconomic statuses.



*Figure 4. The contribution of parents made to the school as charitable donations.*



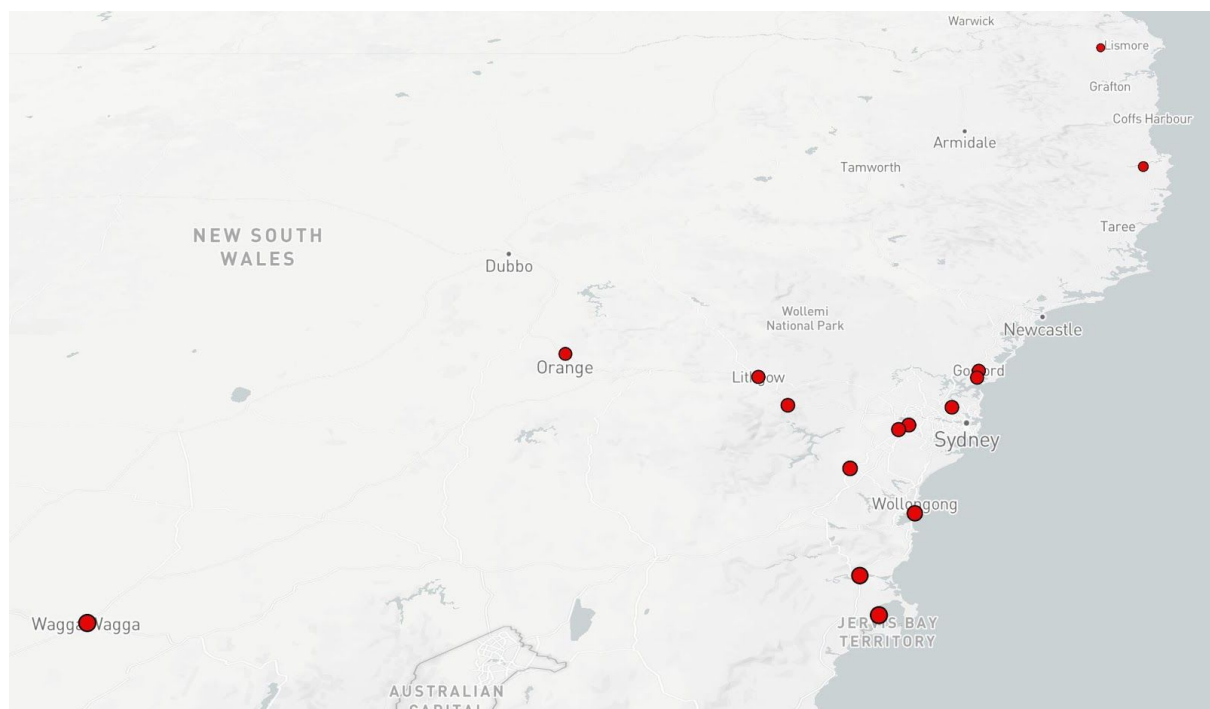
*Figure 5. The subject contributions of parents made to the school for electives that go beyond the minimum requirements of the curriculum.*

From Fig 4 and 5, it can be observed that nearly all schools receive or ask for extra funding by the families of the students. There are contrasts that can be made between the voluntary contributions and the subject contributions such as the juxtaposition between Sir Eric Woodward Memorial School (SEWMS) and Fairvale High School. Where SEWMS has the highest voluntary contribution but no subject contributions, and Fairvale High School not only has the second highest voluntary contribution, but also the highest subject contributions. This raises a concerning question of; 'should these lower socioeconomic families be paying voluntary fees and subject contributions, or should this funding come from elsewhere?', as it is just as critical for the child's home to be suited for learning as

it is at their school, and to achieve a better learning environment would require access to more funds (Buckingham, Wheldall and Beaman-wheldall, 2013). This however, is only a snippet of the upper echelon of schools with five or more learning disability classes. Population of these schools, background and ethnicity of the people in the community, accessibility, etc. are also factors which can play a large role in funding. Furthermore, it would be interesting to produce outcomes for schools with four or more learning disability classes to observe a larger spectrum of schools and the funding they receive from families, this can be done through changing the function itself, and was not performed for this report as this report is a proof of concept for outputting the analysed data itself.

All of the data shown above has been tested to ensure validity through a step by step checking process, always linking back to the original dataset from the official government channels.

In conclusion, after mapping the suburbs that these schools reside in (which is in the lower socioeconomic average areas)(SEIFA, 2016). It strengthens an argument which deliberates whether the socioeconomically challenged families with children that have learning disabilities are receiving enough support, as it is a further detriment to the already existing issues facing financially challenged families (Considine and Zappala, 2002).



*Figure 6. The suburb locations of the schools throughout NSW.*

It is with this short introductory report to the learning disability issue that further analysis work can be performed, to create more observations and highlight the link between lower socioeconomic families and the learning disability support of children in non-specialised schools. The need to produce a function which created the visualisations was evident to convey a compelling argument towards the reports topic. Using Seaborn and Mapbox to show the data, created a clean and scientific aesthetic. Applying more datasets to the function could also create different discussions depending on the data itself, as the function of the visualisations create a parametric framework where data is able to change to create new outcomes. The limitation of this function can be factored by the datasets available, where certain critical points cannot be made due to the public data available. It is also important to note that the ATO data does not match the same year as the disability classes by school dataset.

## Methods and Data

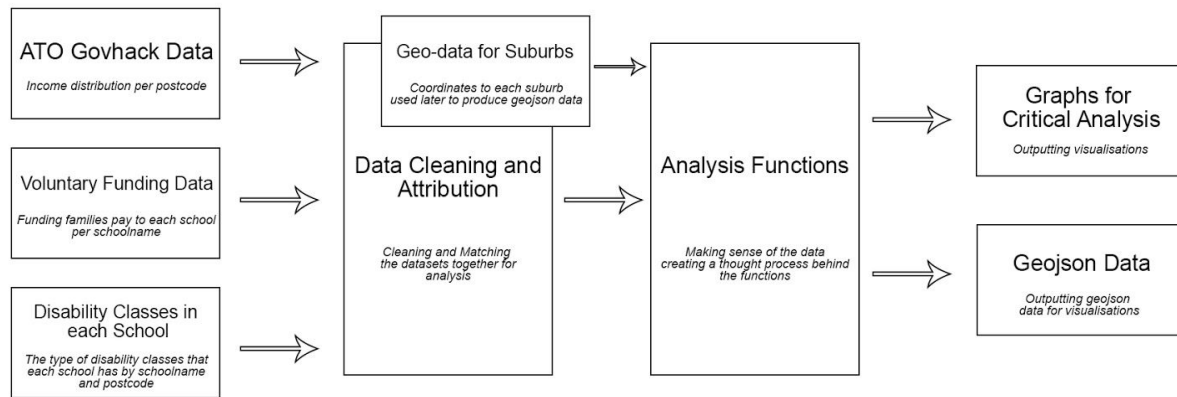


Figure 7. Flow diagram of the data analysis process.

Postcode with coordinates

<http://www.corra.com.au/australian-postcode-location-data/>

Voluntary government school contributions (2014-2017)

<https://data.cese.nsw.gov.au/data/dataset/voluntary-government-school-contributions>

ATO GovHack 2017

<https://data.gov.au/dataset/govhackato/resource/1f187a2d-df9d-4e1e-871e-2bfcced4a5e4>

Specialist support classes by school

<https://data.cese.nsw.gov.au/data/dataset/specialist-support-classes-by-school-and-support-needs-type/resource/a963949f-99b5-49a9-a208-d15ab9a4d320>

Mapbox with points of the school suburbs

<https://goo.gl/n4N5G6>

Github Repository

<https://github.com/kdanielyu/progcities-a3>

## References

Buckingham, J., Wheldall, K. and Beaman-wheldall, R., (2013), Why Jaydon Can't Read: The Triumph Of Ideology Over Evidence In Teaching Reading, *Policy* (29)3, Spring 2013, pp. 21-32

Considine, G. & Zappala, G., (2002), Factors influencing the educational performance of students from disadvantaged backgrounds, in T. Eardley and B. Bradbury, eds, *Competing Visions: Refereed Proceedings of the National Social Policy Conference 2001*, SPRC Report 1/02, Social Policy Research Centre, University of New South Wales, Sydney, 91-107.

Karp, P., (2017), Gonski 2.0: NSW urges principals to fight \$1.8bn cut in school funding, *The Guardian Online*.

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