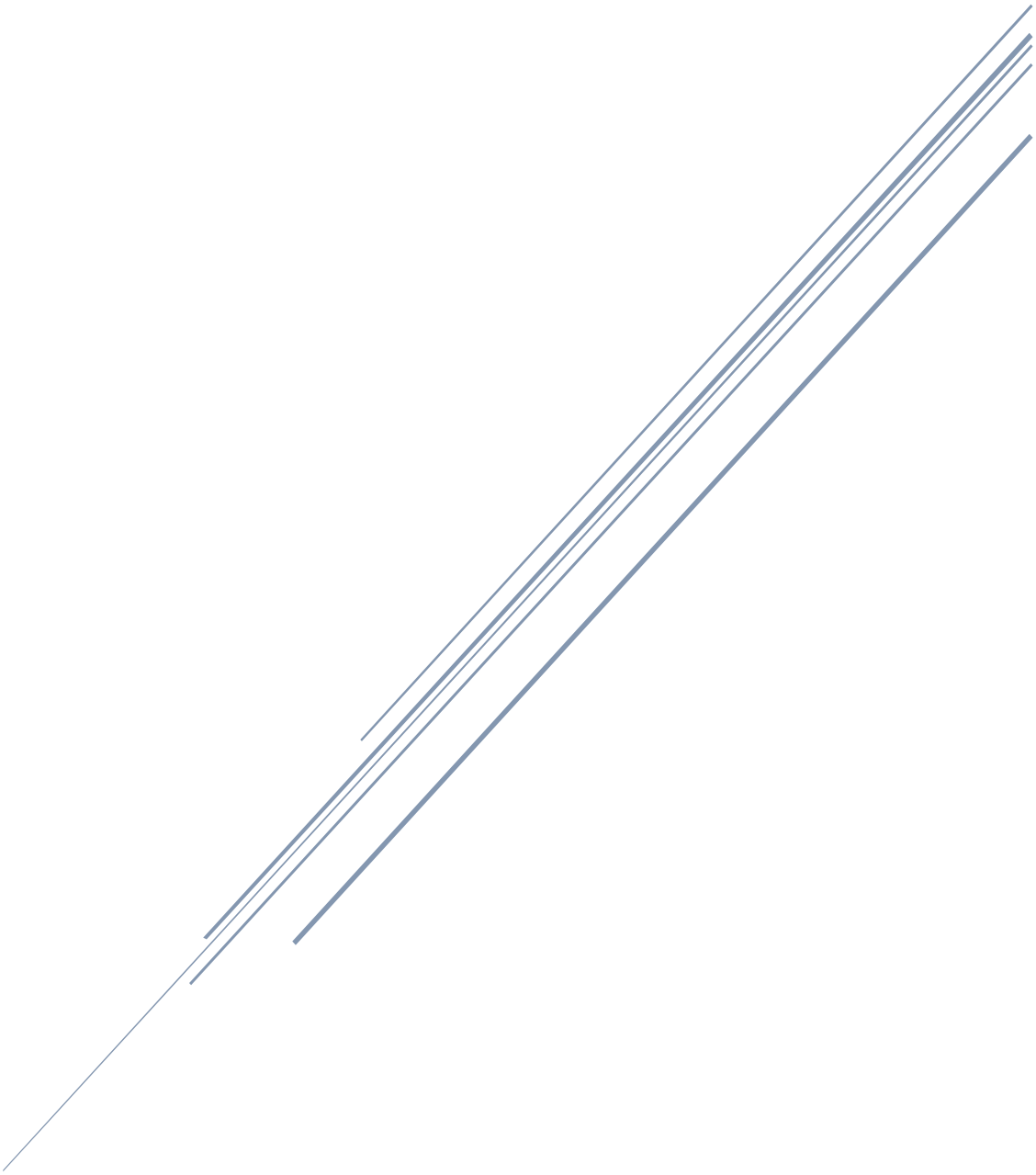
TABLEAU DASHBOARD AND REPORT

Queensland NAPLAN 2014

Word count: 3600 – 3800 approx. Exclusive of tables, figures, and reference list



Jayden Dzierbicki
MA5830

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Dashboard purpose

The National Assessment Program – Literacy and numeracy (NAPLAN) test provides insight into how students are performing in areas of literacy and numeracy to support improvements in teaching and learning. The data generated allows schools to measure their students' achievements against national minimum standards and student performance in other states and territories ("NAP - Test Results", 2021)

In Victoria for example the start of the academic year is an optimal time to consider using previous student NAPLAN results to inform the current academic year learning plans, recently NAPLAN data has had a role in improving Year 3 and 7 Victorian students in both reading and numeracy ("Using NAPLAN and assessment data to inform teaching", 2020), and the purpose of this Dashboard intends to model what has been seen in Victoria for the domain specific problem with a top-down approach considered to a novel problem.

Target audience

The target audience of this dashboard will be teachers of Queensland who teach Year 3 and Year 7 reading and numeracy across the state. The dashboard will allow the teachers to utilise data to allow them to plan their academic year for their students based on previous results of their school and can both consume and produce data to see how their school may compare to schools in both same and similar postcodes, city statues and school sector for comparison through the inclusion of filters.

Assumptions

- **General Assumptions:** It is assumed that all teachers in Queensland have completed an approved initial teacher education qualification at an Australian University ("Qualifications to become a teacher", 2021).
- **Data Assumptions:** Reviewing a course outline for a Bachelor of Primary Education we note that a statistics course is embedded into the curriculum, this means the notation of common statistics would be understood such as mean, median, mode and standard deviations to name a few ("Bachelor of Primary Education", 2021).
- **Visualisation Assumptions:** We will assume using the same logic applied to data assumption that teachers would have had exposure to common graphs in their Bachelor Course such as bar charts, boxplots and can also use interactive maps either through previous exposure or through a logical approach.
- **Time assumption:** We will assume that teachers are time rich when developing their academic year, especially since teachers are provided with professional developments days to allow staff to come together and develop their abilities and learn new skills to implement in their classes (Bucley, 2017).

Intent

- Allow target audience to consume data relating to NAPLAN results, specifically year 3 and year 7 in relation to reading and numeracy only as our domain specific problem.
- Allow a school to compare results relative to other schools through the use of comparing Z-scores for the following domains if normally distributed, (1) year 3 reading, (2) year 3 numeracy, (3) year 7 reading and (4) year 7 numeracy.
- Allow audience to interact with a visual map with embedded tooltip features to provide summary.
- Allow user to interact with numerous filters such as school name, school sector and school type through a drop down menu.

- Allow schools to have a summary of information regarding statistics such as gender distribution (Forgasz, 2011), indigenous enrolments (Dreise, 2021) and student teacher ratios ("How Important is the Student-Teacher Ratio for Students? - CES Schools", n.d.) as possible factors which can impact overall performance in a classroom and NAPLAN results.
- Allow to compare schools based on geolocations.

Dashboard layout

The layout of the dashboard has exploited the use the of the design principle related to 'The Golden Ratio' (figure 1). The use of The Golden Ratio is that the users eyes scan the image via a natural path enhancing user readability and increase vision processing in the brain (Weinerger, 2015), reducing overall cognitive load through a natural layout for out target audience.

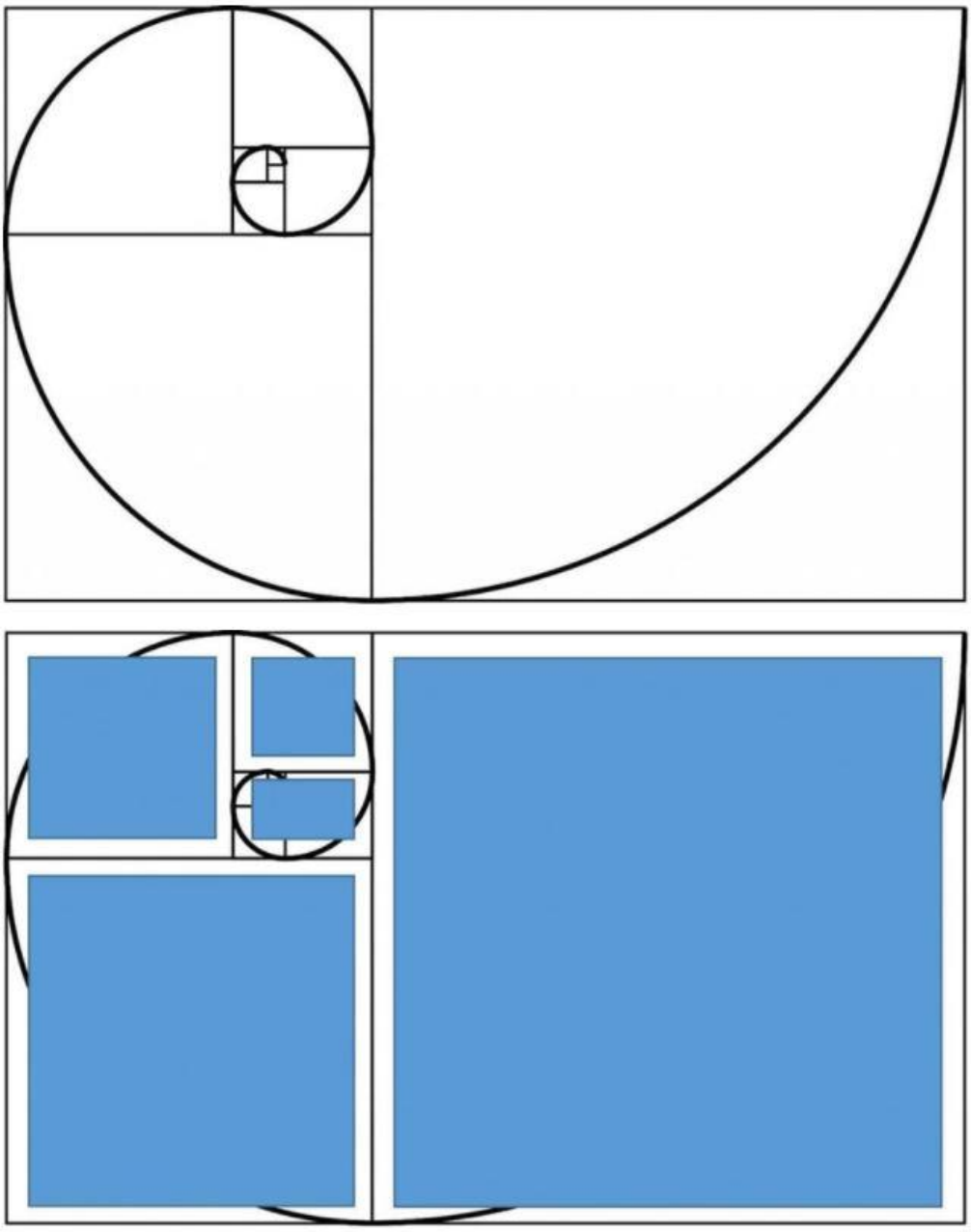

Figure 1: Dashboard design utilising golden ratio principle (Weinberer, 2015).

A wireframe for the dashboard was developed utilizing figure 1. It is deliberate that the map occupies the larger section of the dashboard and has bi-directional and unidirectional implications onto smaller visuals during the user's task abstraction phase (figure 2). The map visual was elected to occupy the most space as the intent of the dashboard is to consume and produce data in relation to a particular school and allows the user to compare schools in similar geolocations and postcodes

aligned with the original intent, and since the map also has a tooltip embedded with visual 3. The positioning of visual 1 and 2 (figure 2) is that they can occupy less space and in line with the golden ratio principle, whilst the reset button and information button occupy the least amount of space and are positioned together (figure 2) following the layout of figure 1, allowing for an aesthetically pleasing dashboard layout which reduces cognitive load for the target audience and makes the dashboard more intuitive for our audience.

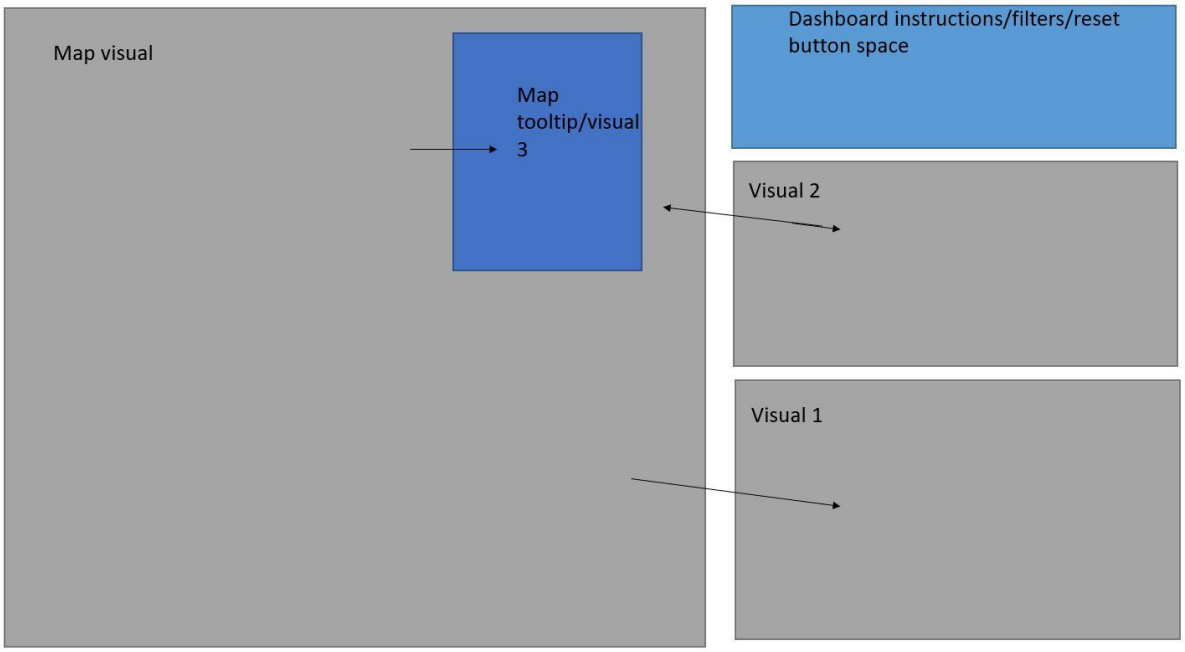

Figure 2: Proposed dashboard layout based on golden ratio principle.

Dashboard Visualization Themes

The dashboard choice was based on an exploratory dashboard as the primary objective is to allow our target audience to delve into a subject and produce ad-hoc summarise (Jones, 2014) depending on the user and school as each use will produce unique results.

When building an exploratory dashboard, it is crucial to follow the eight steps as outlined by Jones (2014), (1) the design, (2) the individual sheets, (3) the annotations, (4) the objects, (5) the actions, (6) the formatting, (7) the delivery and finally (8) the results. Following this method as outlined by Jones (2014) ensures that the encoding and visualisation themes are followed and prevents and reduces the chance of clutter and enhanced cognitive load on our user to ensure a dashboard which is both visually appealing and not inundated with visuals just for the purpose of inclusion (Jones, 2014).

The overall theme of the Dashboard and aesthetic chosen was similar school of thought to the implementation of a static visual, ensuring we elected to use effective visuals (Knaflic, 2015) such as bar charts and tables when appropriate, follow any rules of thumbs such as an overview first, zoom and filter the details on demand (Munzner & Maguire, 2015) through user task abstractions, and reduce clutter such as implement neutral colours and exploit gestalt principles when appropriate (Knaflic, 2015).

Dashboard Data

Note: *All deviations to the Dashboard plan have been incorporated into this section and highlighted accordingly in respect to data summary only.*

Data processing

Step 1: Download data

Data was downloaded from Assignment 4 section of the MA5830 JCU learning page and contributed of three files, (1) school_stats_naplan_2014_Queenslnad.xlsx, (2) school_profile_2014_Queensland.xlsx and (3) school_locations_2014_queensland.xlsx and will be referred to as school naplan, school profile or school location respectively.

Step 2: Tableau Prep

The downloaded data was processed using tableau prep by connecting to a Microsoft excel file, this was completed three times for each input file provided. All variables were kept during the data processing stage despite many not to be included in the final dashboard as per the intent, this was to ensure nothing was dropped prematurely and to allow for deviations to the dashboard plan at a later state if deemed appropriate.

School NAPLAN data was loaded into tableau prep and the clean-up involved one change, that was to change the variable Suburb to a geolocation, the output was then saved locally as 'NAPLAN_Output".

School Profile data was loaded into tableau prep and the clean-up involved two steps, (1) change the variable state to geolocation state/province and (2) change the variable to geolocation zip code/postcode, the output was then saved locally as "Location Output".

School location data was loaded into tableau prep and the clean-up involved four steps, (1) change the variable state to geolocation state/province and (2) change the variable to geolocation zip code/postcode, (3) change governing body URL variable to URL and (4) change school URL to URL, the output was then saved locally as "Profile Output"

Step 3: Tableau

The output of step 2 was then imported into Tableau in the following order by connecting to a Microsoft excel file which was saved locally to the machine in step 2, (1) NAPLAN Output, (2) Location Output and (3) Profile Output. To establish a join between the three data sets a common attribute was identified as a primary key, the key in the NAPLAN output was titled "Acra Sml ID" and was joined with "ACARA SML ID (Profile)" key of both Location and Profile output with a many to many cardinality relationship with no other settings changed.

Summary of original variables

Table 1 summarises all the original variables used in the worksheet with summary statistics in relation to the entire data file, that is without the application of any filtration as discussed later. Through the exploratory stage the following limitations were detected using basic data analysis looking at common summary statistics, noting this is not an exhaustive list.

- **Errors in data reporting:** Not all schools have been assigned a geolocation, the data suggests that there are 1,865 Schools in Queensland, whilst there were only 1,702 observations of Geolocation recorded, 163 null values recorded.
- **Input error:** Reviewing the minimum value for total enrolment we observe a minimum value of two, this value does not make sense in a broad sense and could suggest input error.

The above limitations can impact data quality leading to inaccurate analysis in the overall dashboard leading to many types of anomalies in the analysis ("The Impact of Poor Data Quality in 2021 - Objective", 2021).

Table 1: Summary statistics of original variables used in dashboard implementation along with notes and observations.

Original variable	Type	Summary						Worksheet	Limitation & notes
yr3nummean		mean=387.4	SD=36.05	median=387.5	min=257	max=500	n=902	Z-score	
yr3readmean		mean=401.1	SD=41.47	median=402.0	min=183	max=537	n=901	Z-score	
yr7nummean		mean=535.8	SD=36.29	median=535	min=426	max=649	n=827	Z-score	
yr7readmean		mean=534.2	SD=34.09	median=534.0	min=395	max=641	n=828	Z-score	
Geolocation	Categorical	Levels=5	count=1,702					Enrolment summary	This suggest that not all schools have been assigned a geolocation as difference in count, a geolocation filter will incorrectly remove schools with missing geolocations
Indigenous Enrolments (%)		mean=10.62%	SD=15.9	median=6%	min=0%	max=100%	n=1,680	Enrolment summary	
Total enrolments		mean=458.2	SD=440	median=354.5	min=2	max=4,529	n=778.960	Enrolment summary	This suggests not all schools have recorded gender correctly, also a school with an enrolment of 2 students raises questions to how the data was reported as this does not make sense on face value.
Boy enrollment		mean=235	SD=245.3	median=171	min=0	max=2,011	n=399,434	Gender enrolment	
Girl enrollment		mean=223.3	SD=228.7	median=167	min=0	max=2,518	n=379,526	Gender enrolment	
School sector (Location)	Categorical	Levels=3	Count=1,865					Tree map Deviation 2	Deviation to original plan.
School type (Location)	Categorical	Levels=4	Count=1,865					Tree map – Deviation 2	Deviation to original plan.
School name (Location)	Categorical	Levels=1,791	Count=1,865					Map	This suggests that some schools share the same name/not all schools have been assigned a geolocation as difference in count.
Postcode (Location)	Geolocation		Count=1,865	Distinct count=406				Map	This suggests that schools share the same postcode

Calculations

All calculation were completed in tableau and table 2 summarises the variables created for the dashboard along with the equation used, nothing that justifications and limitations are discussed in the relevant worksheet section.

Table 2: Created variables used across all worksheets for dashboard implementation.

Created value	Equitation	Summary	Worksheet
LODf_yr3nummean_avg	{ FIXED : AVG([Yr3Nmcymean]) }	Multiple uses	Z-score
LODf_yr3nummean_std	{ FIXED : STDEV([Yr3Nmcymean]) }	Multiple uses	Z-score
LODf_yr3readmean_avg	{ FIXED : AVG([Yr3Readmean]) }	Multiple uses	Z-score
LODf_yr3readmean_std	{ FIXED : STDEV([Yr3Readmean]) }	Multiple uses	Z-score
Z_Score_yr3nummean	([Yr3Nmcymean] - [LODf_yr3nummean_avg]) / [LODf_yr3nummean_std]	Z-score to compare schools performance for yr 3 numeracy against Qld population	Z-score
Z_Score_yr3readmean	([Yr3Readmean] - [LODf_yr3readmean_avg]) / [LODf_yr3readmean_std]	Z-score to compare schools performance for yr 3 reading against Qld population	Z-score
LODf_yr7nummean_avg	{ FIXED : AVG([Yr7Nmcymean]) }	Multiple uses	Z-score
LODf_yr7nummean_std	{ FIXED : STDEV([Yr7Nmcymean]) }	Multiple uses	Z-score
LODf_yr7readmean_avg	{ FIXED : AVG([Yr7Readmean]) }	Multiple uses	Z-score
LODf_yr7readmean_std	{ FIXED : STDEV([Yr7Readmean]) }	Multiple uses	Z-score
Z_Score_yr7nummean	([Yr7Nmcymean] - [LODf_yr7nummean_avg]) / [LODf_yr7nummean_std]	Z-score to compare schools performance for yr 7 numeracy against Qld population	Z-score
Z_score_yr7readmean	([Yr7Readmean] - [LODf_yr7readmean_avg]) / [LODf_yr7readmean_std]	Z-score to compare schools performance for yr 7 reading against Qld population	Z-score
LOD_malefemale_ratio	[Boys Enrolments]/[Girls Enrolments]	Detail for worksheet, allow to compare ratio for user	Gender enrolment
Remove null schools	IF ISNULL([Pivot Field Values]) THEN NULL ELSE 'keep' END	This filter was created first by pivoting the NAPLAN data as summarised in *Dashboard Deviation* section and was used to filter the data to the domain specific problem in relation to the Dashboard purpose after the implementation of the original Dashboard.	Map, Gender enrolment, enrolment summary and treemap

Dashboard worksheets & Visualisation themes

Note: *one extra worksheet was included in the final dashboard and is discussed in the major implementation deviation section and is omitted from this section.*

Note: *When reviewing task abstraction for a particular worksheet we will focus on the most obvious ones noting that task abstraction is a broad concept and can include multiple elements which could be discussed individually from the analyse, search or query aspect (*Munzner & Maguire, 2015). *More broadly speaking that is a particular worksheet could have multiple different elements of task abstraction based on figure 3 with actions produced by the target audience and is not limited to one level, for this analysis we have limited to only one or two task abstractions in the discussion due to limitations in the report length.*

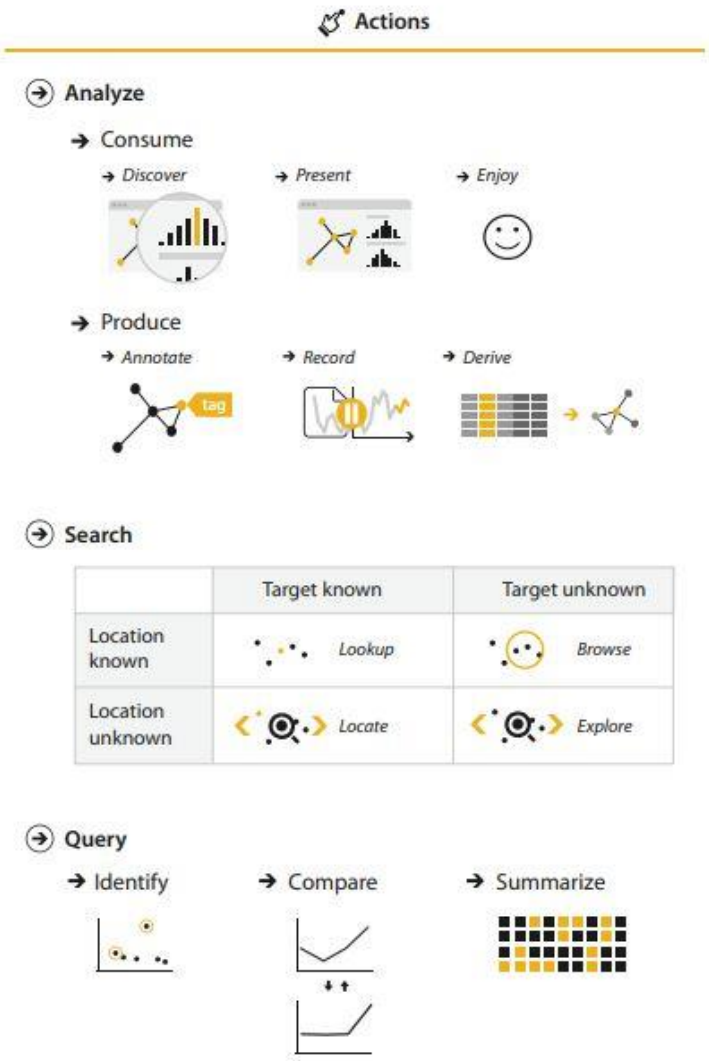

Figure 3: Task abstraction is composed of three levels: analyse, search and query (Munzner & Maguire, 2015).

Z-score worksheet

Intent

The purpose of this worksheet is to allow the target audience to see how their school performed withing a particular defined domain relative to other schools in the Queensland population, aligning with the Dashboard intent and within the scope of the target audience's data assumptions.

Data description (what)

The data attributes used for the data visual are shown in table 3 with a detailed summary located in the Dashboard Data section of the report pertaining to summary statistics (table 1) and equations used to create the variables (table 2). Exploratory analysis of the distribution of each domain was completed in tableau and each domain was approximately normally distributed based on the histogram produced. A possible limitation is the lack of access to raw student data and instead producing a Z-score based on the average domain score for each school and comparing the distribution of the average, with access to raw data it could possibly elude to a different 'story' (Fowler, 2020) and highlights a concerning limitation.

The benefit of converting to a Z-score allows the target audience to see how there school compares relative to the sample and even apply the 68-95-99.7 rule (Mcleod, 2019) allowing teachers to see how there school performed on average. The use of an average bar chart was considered but failed to detect magnitude of performance.

Table 3: Summary of attributes used in z-score worksheet

Attribute	**Type**	**Marks**	**Channels**	**Gestalt Principle**
Z_score_yr3nummean	Numeric ratio	1D: Line	Magnitude channel	
Z_score_yr7nummean	Numeric ratio	1D: Line	Magnitude channel	
Z_score_yr3readmean	Numeric ratio	1D: Line	Magnitude channel	
Z_score_yr7readmean	Numeric ratio	1D: Line	Magnitude channel	
0 Constant line		1D: Line		Enclosure

Visualisation selection and aesthetics (how)

The benefits of a bar chart is that they are common and easy to interpret reducing overall cognitive load for the target audience (Knaflic, 2015). For this visual we have elected to use a positive negative vertical bar chart.

- **Enclosure:** It is thought that humans think of objects which are physically enclosed together as belonging to a group (Knaflic, 2015), through the inclusion of a zero constant line we are able to exploit this principle of group as either below or above zero. That is if the bar is above the zero-reference line then that domain has exceeded compared to the average and if below the zero reference line they have performed poorly for that domain. This allows for our target audience to easily ground themselves in line with a reference value around zero.

Task abstraction

The purpose of the z-score worksheet is to produce data in relation to a specific school and thus the interaction for this worksheet should be linked to the map only as we need to avoid taking the average of the z-score should in interact directly with any other worksheets, allowing the map to act as a filter for this worksheet, or inserting this worksheet as a possible tooltip to avoid confusion for the target audience (White, 2017). The most obvious form of produce task abstraction would be related to the derive goal to produce new data elements based on existing data elements (Munzner & Maguire, 2015).

Gender enrolment

Intent

The purpose of this data visual and worksheet will be to summarise enrolment numbers by gender, it is thought that certain genders perform differently in the NAPLAN and to compliment schools performance allowing the target audience to directly compare results between schools and provide a summary of gender enrolment.

Data description (what)

The data attributes used for the data visual are shown in table 4 with a detailed summary located in the Dashboard Data section of the report pertaining to summary statistics (table 1) and equations used to create the variables (table 2).

There are a small number of observations which contain null values for both boy and girl enrolment suggesting possible errors in administrative handling of data (table 1), there are also some schools which are exclusively single sex and will produce a null value when divided by zero (table 1). Limitations were discussed previously surrounding this data and can be found in table 1.

Table 4: Summary of attributes used in z-score worksheet
*Used in tooltip

Attribute	**Type**	**Marks**	**Channels**	**Gestalt Principle**
Total enrolments	Numeric	*	*	
LOD_malefemale_ratrio	Numeric	*	*	
Boy enrolments – sum	Numeric	1D: Line	Magnitude channel	Similarity
Girl enrolments - sum	Numeric	1D: Line	Magnitude channel	Similarity

Visualisation selection and aesthetics (how)

The benefits of a bar chart is that they are common and easy to interpret reducing overall cognitive load for the target audience (Knaflic, 2015). For this visual we have elected to use a vertical bar chart for sum enrolment boy and sum enrolment girl

- **Similarity:** Through using different colours for our measure values, we can exploit the similarity principle, that is boy enrolment and girl enrolment are not related to one another (Knaflic, 2015) and prevent confusion for our target audience.

Task abstraction

The purpose of this visual is to allow teachers to discover if there is a relationship between enrolment by gender number and NAPLAN scores. The task abstraction is both consume and produce with the consume relating to discovery, allowing our target audience to consume the data and test a particular hypothesis (Munzner & Maguire, 2015) and the produce phase will allow our target audience to record the output as an artefact such as a screenshot (Munzner & Maguire, 2015).

Enrolment Summary

Intent

The purpose of this visual and worksheet will allow the target audience to search on schools based a particular geolocation as well as highlighting which geolocation has the greatest indigenous enrolment (%), the justification for this visual was that indigenous enrolment is a factor which is associated with poorer outcomes on NAPLAN ("Closing the gap indigenous students and NAPLAN", n.d.) and will allow teachers to further compare schools in a similar geolocation aligning with the intent of the dashboard. This visual should also compliment gender enrolment through the inclusion of a total enrolment value.

Data description (what)

The data attributes used for the data visual are shown in table 5 with a detailed summary located in the Dashboard Data section of the report pertaining to summary statistics (table 1).

There are a small number of observations which contain null values for total enrolment (table 1) suggesting possible errors in administrative handling of data and a limitation in the overall data set.

Table 5: Summary of attributes used in z-score worksheet
* Presented in table form, use of numbers only, colour avoided to prevent cognitive load.

Attribute	Type	Marks	Channels	Gestalt Principle
Indigenous Enrolments (%)	Numeric	*	*	
Total Enrolments	Numeric	*	*	

Visualisation selection and aesthetics (how)

Tables allow for the interaction with a user's verbal system and are considered appropriate when communicating mixed data types such as categorical and numerical with different units of measure such as totals and percentages (Knaflic, 2015).

- We have avoided to use any additional colour as it was deemed to add little value to the overall dashboard and wanted to avoid extra cognitive load for our target audience and to use colour sparingly as colour can contribute to clutter (Knaflic, 2015).

Task abstraction

The purpose of this visual is to allow the target audience to search and consume data in relation to schools in a similar sector and type should the user be interested, this is a form related to the browse concept, that is the search target might not be known in advance and the user might be searching for one or more items (Munzner & Maguire, 2015). The aspect of consume would relate to when the user lands on the dashboard with no filters applied to have a summary of enrolments based on the overall domain specific question relating to the dashboard purpose.

Dual axis Map

Intent

The purpose of this worksheet is to show spatial position utilising a geospatial plot showing the distribution of schools located in Queensland aligned with the intent of the overall dashboard relating to NAPLAN data only. The most effective way to encode for geographic data is using a map (Munzner & Maguire, 2015).

Data description (what)

The data attributes used for the data visual are shown in table 6 with a detailed summary located in the Dashboard Data section of the report pertaining to summary statistics (table 1) and equations and equations used to create the variables (table 2).

During the data importing stage it was noted that the original variables had to be altered to conform to tableau such as postcode being related to geospatial data to ensure useability within the programme.

Table 6: Summary of attributes used in z-score worksheet

Attribute	**Type**
Postcode	Geolocation
Longitude	Geolocation
Latitude	Geolocation
School Name	Categorical
Student teacher ratio	Numeric

Visualisation selection and aesthetics (how)

The benefit of a map is that they are considered the most practical way of communicating where things are in relation to one another (Jones, 2014). This practically and familiarity for our target audience was the principle reason for visual selection as it aligned well with the dashboard overall intent, allowing the user to interact, consume and produce data based on schools in similar geolocations for example as previously outlined at the start of the report. We have encoded schools using small circles and reduced the default size to reduce overall clutter (Knaflic, 2015) and produced a dual axis overlaying postcode to produced a filled map to show schools based on location and area through the use of segregation through borders (Jones, 2014).

Task abstraction

The task abstraction for the map was considered the most complex and highlights the opening note of this section of the report, the map allows our target audience to analyse, search and query during the task abstraction phase (Munzner & Maguire, 2015) as highlighted in figure 3, but more importantly in relation to a single school the most obvious task abstraction would relate to consume and discovery through the use of interaction and embedded tooltip (figure 2).

Dashboard interactivity

Geolocation universal filter

This filter was applied to the dashboard and was sourced utilising the enrolment summary data to impact all other worksheets (table 7). This is aligned with the intent of the dashboard to allow the target audience to search based on geolocation.

Postcode universal filter map

This filter was applied to the dashboard and was sourced utilising the map data to impact all other worksheets (table 7). It allows the user to consume and produce summary statistics surrounding enrolments for a defined postcode and is not aligned with any original intent but was considered useful based on the overall broad intent of the dashboard task abstractions.

School name universal filter map source

This filter was applied to the dashboard and was sourced utilising the map data to impact all other worksheets (table 7). It allows the user to consume and produce summary statistics surrounding a particular school and is aligned with any original intent and was considered useful based on the overall broad intent of the dashboard and task abstractions.

School type/sector universal filter

This filter was applied after the initial dashboard was developed and is discussed in detail in the dashboard deviation section, this filter expends on the original intent and allows teachers to consume, produce and search based on school type and sector. The filter is applied to the dashboard utilising the treamap data to impact all other worksheets (table 6).

Tooltips

Detailed discussion located in z-score worksheet section as to why it was implemented as a tooltip and instead of a standalone for the dashboard interactivity. All other tooltips when hovered over are to allow the user to obtain additional information pertaining to the dashboard overall intent.

Filters

Include drop down filters to search on school, school sector and school type as aligned with the original intent of the dashboard noting that deviations occurred in this aspect as previously mentioned.

Table 7: Summary of actions and filters applied to the Dashboard.

Action name	Source sheet/ Data	Source sheet/Worksheet	Run action on	Target Sheet - Data	Target Sheet - Worksheet	Clearing the selection will	Target filters
Geolocation universal filter	Dashboard 1	Enrolment summary	Select	Dashboard 1	Enrolment summary, Map 2 & treemap	Show all values	All
Postcode universal filter map	Dashboard 1	Map 2	Select	Dashboard 1	Enrolment summary, gender enrolment, Map 2 & treemap	Show all values	Postcode (Location)
School name universal filter map source	Dashboard 1	Map 2	Select	Dashboard 1	Dashboard 1 - ALL	Show all values	School name (Location)
School type/sector universal filter	Dashboard 1	Treemap	Select	Dashboard 1	Enrolment summary, Gender enrolment & Map 2	Show all values	All
Reset button	Dashboard 1	Reset	Select	Dashboard 1	Enrolment summary, Gender enrolment, Map 2 & treemap	Show all values	All variables used in dashboard which are filterable (review file for list)

Dashboard Deviations

Deviation 1:

When reviewing the completed dashboard it was noted that many of the tooltips returned null values due to the school lacking observable grades for the particular domain. To overcome this the following steps were undertaken, the NAPLAN output was duplicated and joined to NAPLAN output and titled NAPLAN_PIVOT. The domain data in relation to [yr3nummean], [yr3readmean], [yr7nummean] and [yr7readmean] was pivoted ("Pivot Data from Columns to Rows", 2021) a new variable was created [Remove null schools] (table 2) and implemented as a filter on all worksheets (excluding z-score worksheet) to ensure the dashboard was in relation to the particular domain aligned with the original dashboard intent. It must be noted that this could be due to inputting errors as discussed in the dashboard data section of the report.

Deviation 2:

When reviewing the completed dashboard it was noted that there was a large amount of white space with the inclusion of school type, school section and school name filter, to overcome the use of white space and add value for the target audience and improving the dashboard intent it was deemed appropriate to include a simple treemap which combined schools into a school type and sector variable, allowing users to easily filter and compare schools in the same type and sector whilst also having a broad overview to consume and produce additional data in line with the overall broad scope and intent of the dashboard.

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