

The Hours of Sleep Mystery - Year 7...

Aim
To determine if the hours of sleep in year 7 students decrease over the years 2010 and 2014.

Hypothesis
My hypothesis is that the sleep hours of year 7's will decrease every year, between years 2010 and 2014, as time spent on technology increase.

Year	Video game time Mean hours spent on video games (hours/week)
2010	5.3
2011	6.1
2012	7.6
2013	7.6
2014	8.2

Data collection
Data was collected using the "random sampler" in the 'Census at Schools' website. (<http://www.cas.abs.gov.au/cgi-local/cassampler.pl>). Hours of sleep of year 7 students (both male and female) were collected for years 2010, 2011, 2012, 2013 and 2014. 100 random answers to the survey question were collected for each year.

Accuracy
Numbers that are 0-4 and 12 or over were considered impractical, and were excluded to make the data more accurate.

Background Information
Sleep is an important part of high school students. Time spent on technology affects the amount of sleep in students. As time spent on technology increases every year, do the hours of sleep in students decrease every year?

Strengths
A large amount of students (100/year) were surveyed, which means that the data will eliminate most of the variables

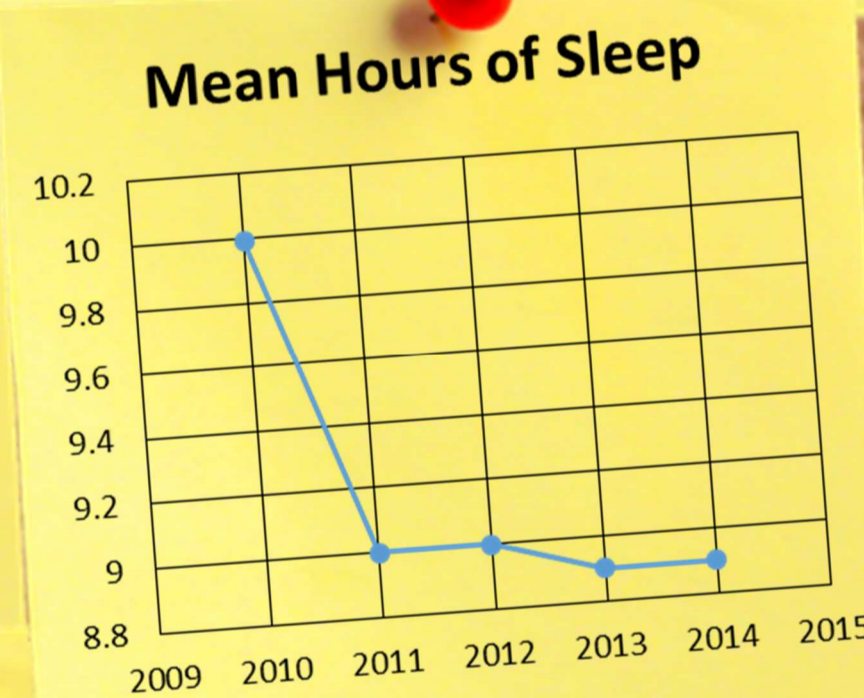
Weaknesses
A large amount of students had put numbers that are 0-4 and 12 or over, which would be impractical in real life. These numbers needed to be excluded, which may have made the results slightly less reliable.

Reliability
The reliability could be improved through repeating the experiment with larger samples of data.

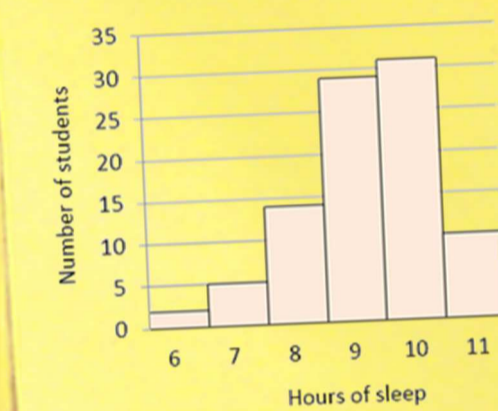
Results

Groups	2010	2011	2012	2013	2014
6	2	9	10	12	11
7	5	9	15	14	12
8	14	15	18	18	13
9	29	25	18	16	24
10	31	24	23	23	20
11	10	8	4	7	8
Unreasonable numbers	9	10	13	10	12
Total	400				

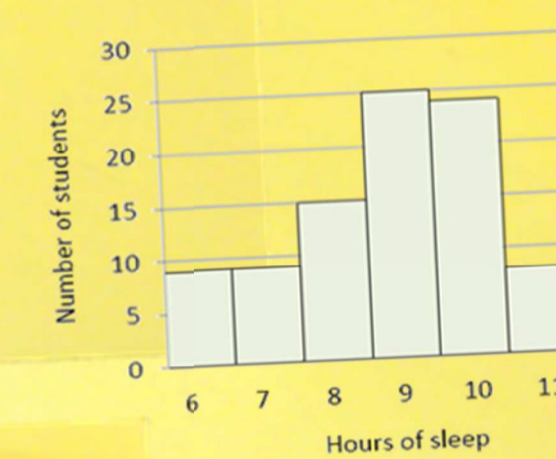
	Mean	Median	Mode	Range
2014	8.9	9	8	11
2013	8.9	9	9	13
2012	9	9	9	9
2011	9	9	10	10
2010	10	9	10	13



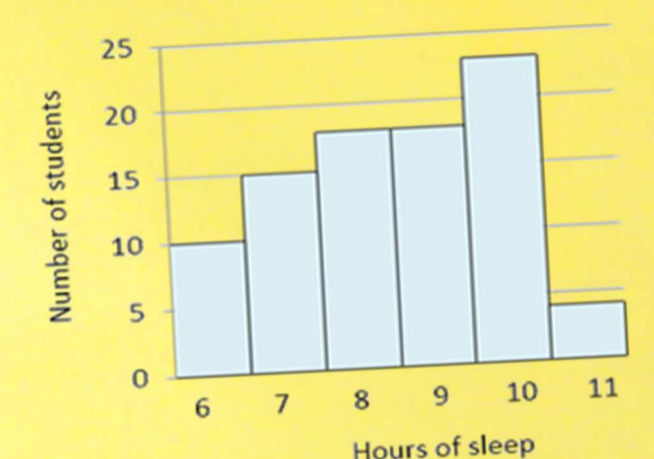
Hours of sleep in year 7 students - 2010



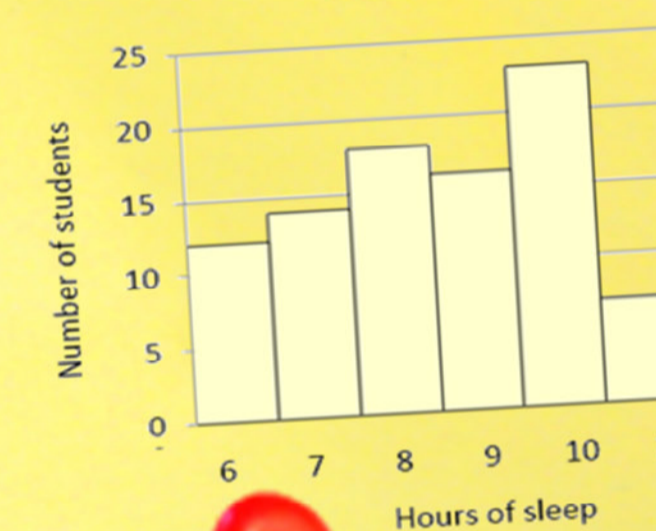
Hours of sleep in year 7 students - 2011



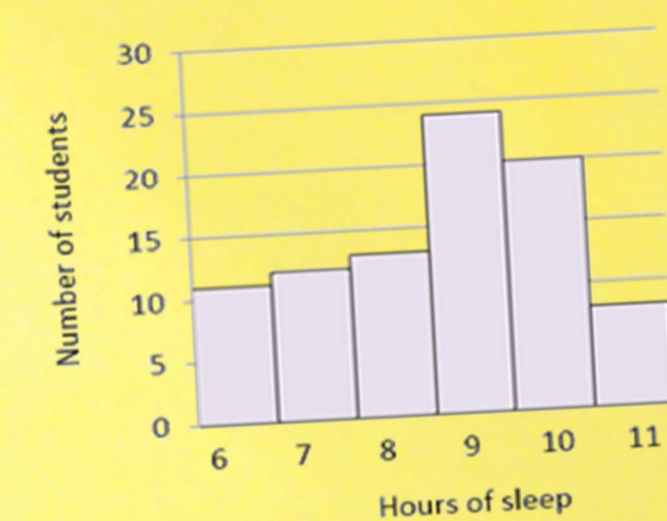
Hours of sleep in year 7 students - 2012



Hours of sleep in year 7 students - 2013



Hours of sleep in year 7 students - 2014



Analysis

The results showed that the sleep hours of year 7 students are decreasing. All the graphs, except the '2013' graph, remained negatively skewed and all the graphs show that the number of students getting the higher number of hours of sleep, are decreasing. The number of students getting the lower number of hours of sleep is increasing. The hypothesis was mostly supported by the results. As seen in the line graph, the mean of the numbers kept reducing over the 5 years. The median remained 9 hours through-out the five years however the mode was changed from 10 to 8 since 2014.

Conclusion
As seen in the data, the hours of sleep of year 7 students decrease over the years 2010 and 2014.

Sources

<http://www.bbc.com/news/technology-28677674>
<http://www.cas.abs.gov.au/cgi-local/cassampler.pl>