AACR Feedback Report

Rubric Level Distribution and Description

QUESTION: Example Question

For this question, your students fall into 3 Rubric Levels. Students with similar ideas fall into the same Rubric Level. The 3 Rubric Levels and the percentage of students in each Rubric Level are shown in the pie chart below.

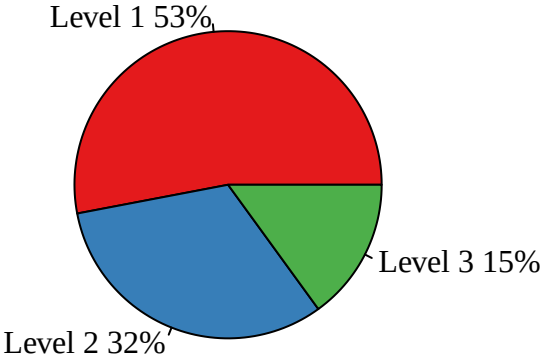


Table 1: Example Response of Each Rubric Level

Level 1	Level 2	Level 3
wrong nucleotide It will not affect replication The G will be changed to an A in the place of G. However	codons to create a stop signal a protein may never be made. Otherwise an incorrect protein will be non functional. It will change the code in the genes and cause those genetic codes	made and replication will stop. DNA replication will not fully occur. The replication process will either

N-gram Overabundance by Rubric Level

Table 2: Overabundance of most frequent n-grams by Rubric Level

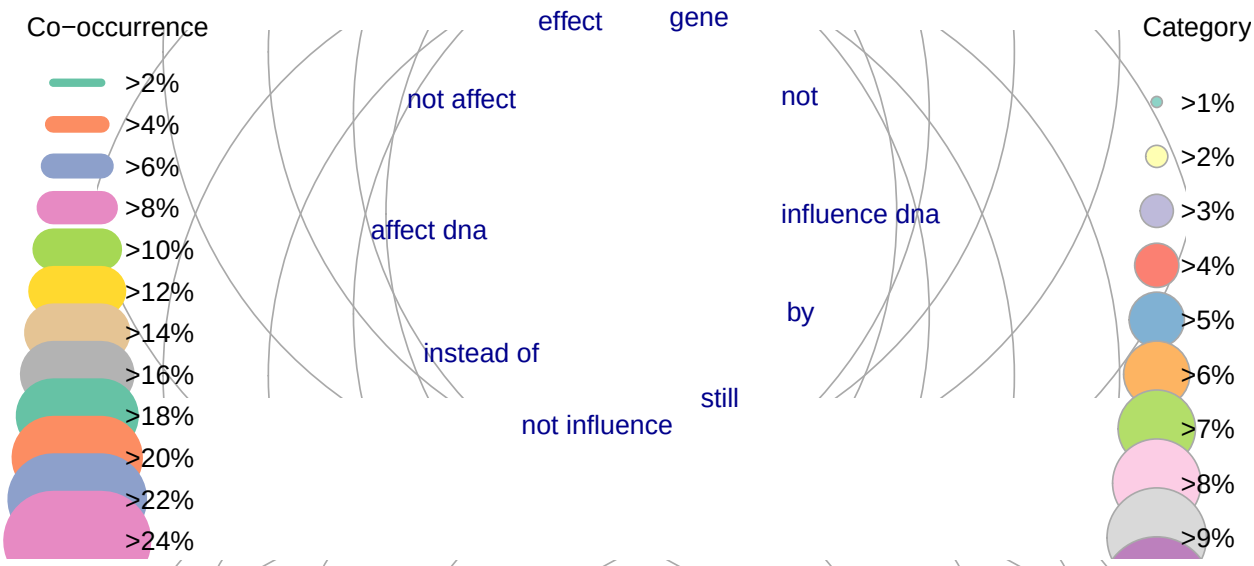
Level 1	Overabundance	Level 2	Overabundance	Level 3	Overabundance
influence dna	0.89	translation	2.12	wont	5.67
not	0.89	function	2.12	to stop	5.67
gene	0.89	dna sequence	2.12	stop replication	5.67
effect	0.89	mrna	2.12	earlier	5.67
not affect	0.89	created	2.12	replication would	5.67
affect dna	0.89	up	2.12	into	5.67
instead of	0.89	lead	2.12	becomes stop	5.67
not influence	0.89	lead to	2.12	most	5.67
still	0.89	an amino	2.12	get	5.67
by	0.89	terminated	2.12	thus	5.67
this alteration	0.89	replication of	2.12	asterisk	5.67
replication dna	0.89	shorter	2.12	cause dna	5.67
pair	0.89	strand of	2.12	be stop	5.67
will still	0.89	codon to	2.12	most likely	5.67
alteration will	0.89	signal	2.12	half	5.67
be	0.89	of amino	2.12	premature stop	5.67
does	0.89	would have	2.12	will end	5.67
encoded	0.89	cut	2.12	all of	5.67
it is	0.89	be made	2.12	replication only	5.67
this	0.89	needed	2.12	be shortened	5.67

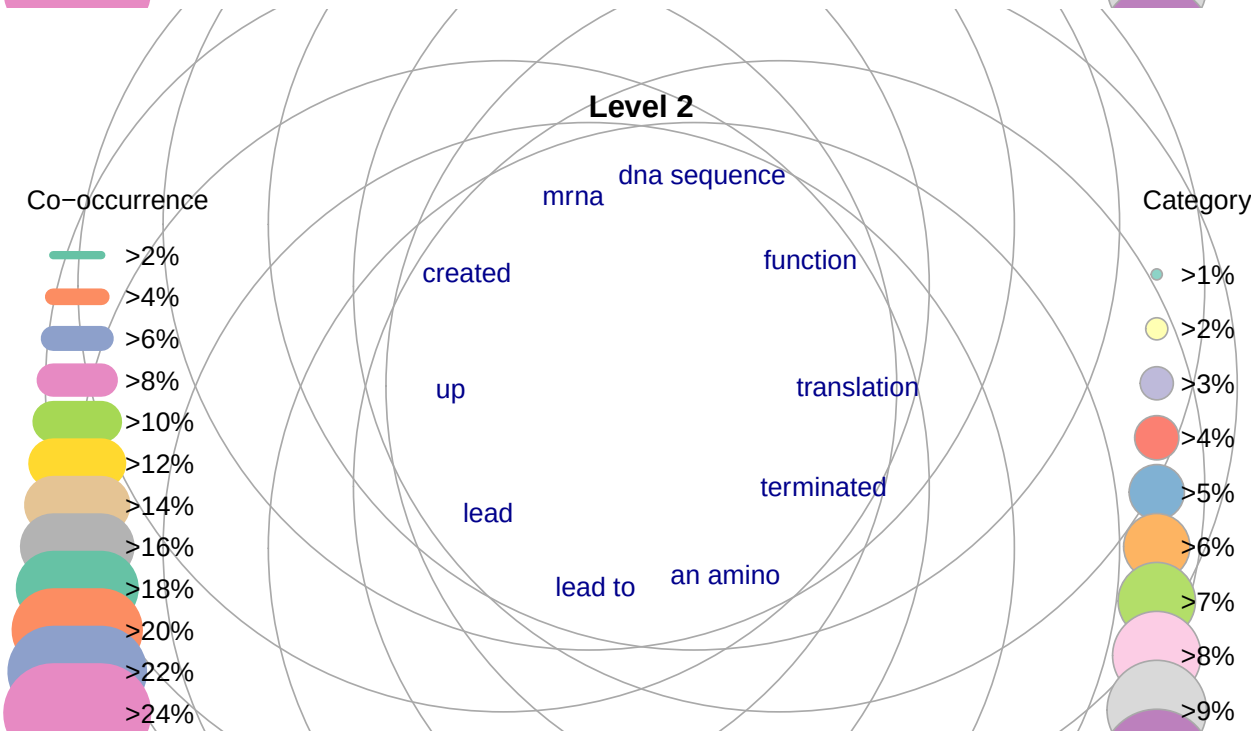
$$Overabundace = \frac{\frac{N(term|score)}{N(score)} - \frac{N(term)}{N}}{\frac{N(term)}{N}}$$

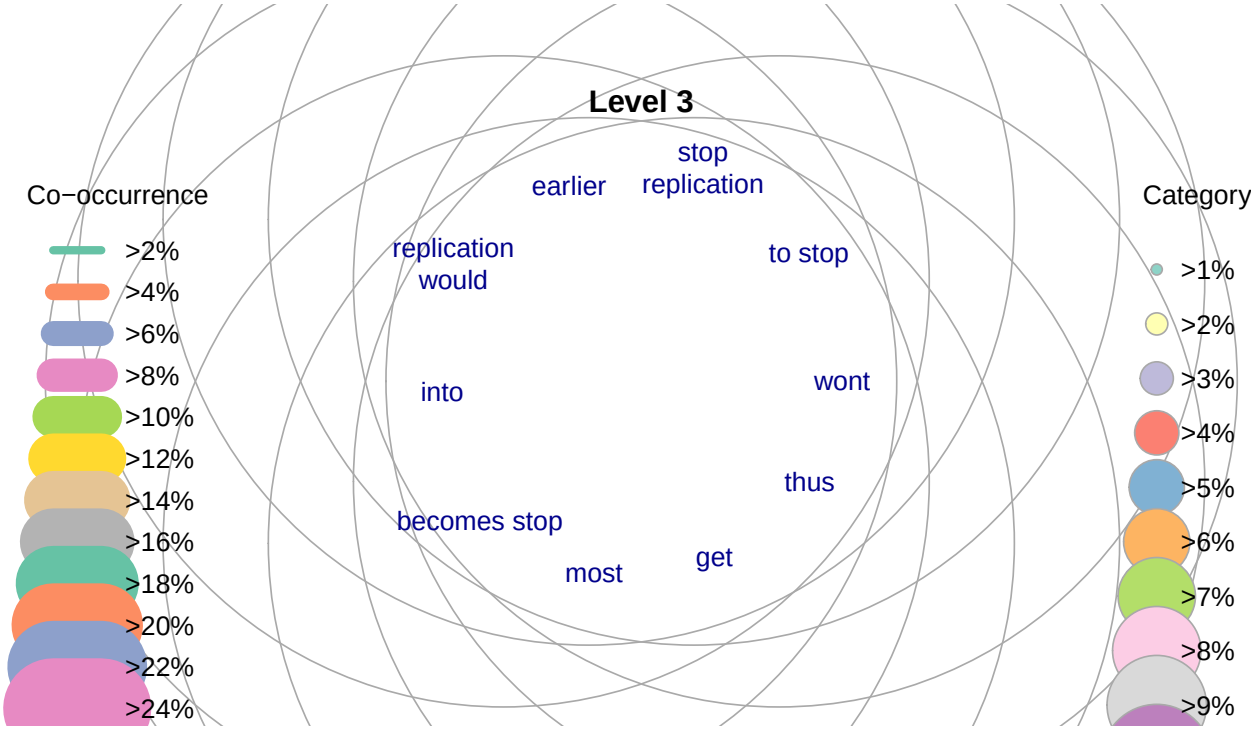
N-gram Co-occurence Web Diagrams

```
## Warning in brewer.pal(nEdges, "Set2"): n too large, allowed maximum for palette Set2 is 8
## Returning the palette you asked for with that many colors
```

```
## Warning in brewer.pal(nNodes, "Set3"): n too large, allowed maximum for palette Set3 is 12
## Returning the palette you asked for with that many colors
```


Level 1
Co−occurrence
>2%
>4%
>6%
>8%
>10%
>12%
>14%
>16%
>18%
>20%
>22%
>24%
effect
gene
not affect
not
affect dna
influence dna
by
instead of
still
not influence
Category
>1%
>2%
>3%
>4%
>5%
>6%
>7%
>8%
>9%


Level 2
Co−occurrence
>2%
>4%
>6%
>8%
>10%
>12%
>14%
>16%
>18%
>20%
>22%
>24%
dna sequence
mrna
created
function
up
translation
terminated
lead
lead to
an amino
Category
>1%
>2%
>3%
>4%
>5%
>6%
>7%
>8%
>9%


Level 3
stop
replication
earlier
replication
would
to stop
into
wont
thus
becomes stop
most
get
Co−occurrence
>2%
>4%
>6%
>8%
>10%
>12%
>14%
>16%
>18%
>20%
>22%
>24%
Category
>1%
>2%
>3%
>4%
>5%
>6%
>7%
>8%
>9%