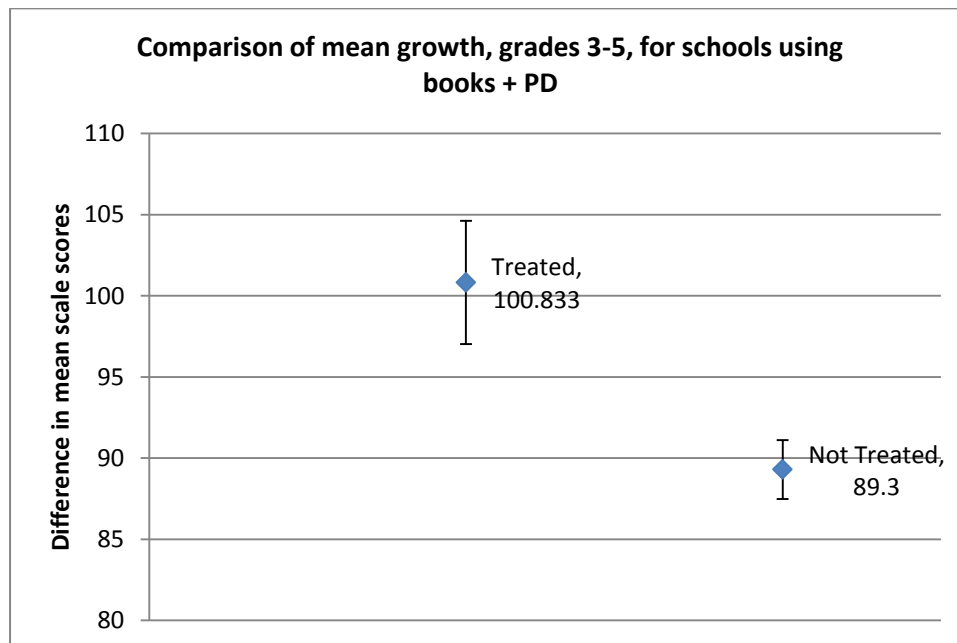


## Grades 3-5 Data for Back-to-Front Maths

When Schools using Back-to-Front Maths books and at least one day of Professional Development were compared to “Like” schools from the MySchool website:

Absolute difference in means between grade 3 and grade 5 for the same cohort

<i>Books + Professional Development</i>	<i>Treated group</i>	<i>Non-treated group</i>
Mean absolute growth	100.833	89.3
Standard Error	3.798	1.814
Variance	173.060	32.9
Number of students sitting NAPLAN	594	unknown
P(T<=t) two-tail, unequal variance	0.0145	
t Stat	2.7405	
P(Z<=z) two-tail	0.0061	
z	2.7405	



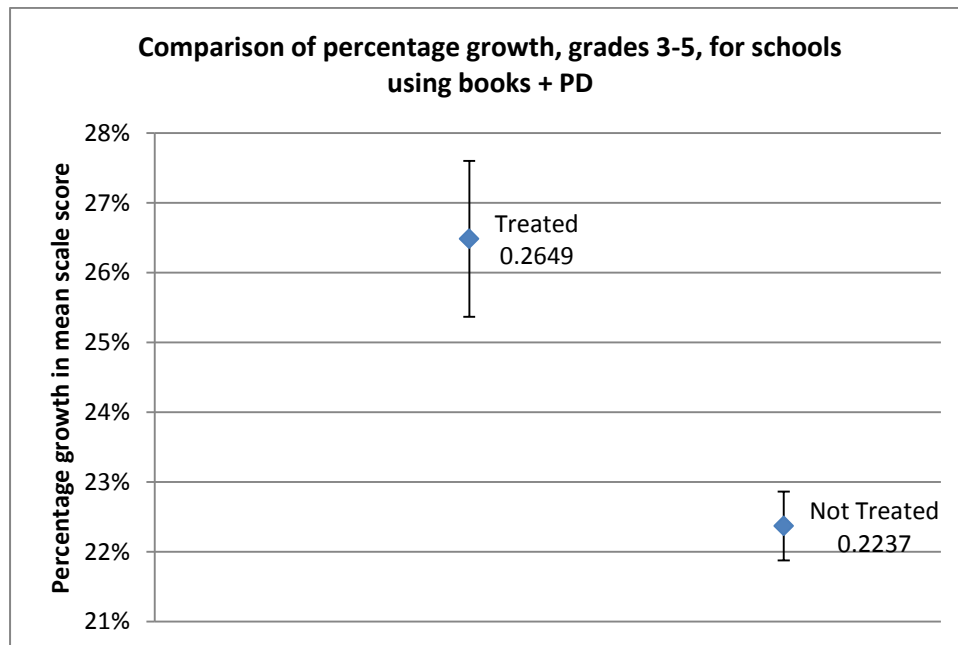
### What this means:

B2F schools had higher cohort growth between grade 3 and 5 than statistically similar schools. The difference between the means was approximately 2.7 standard deviations, with a 99% probability that the means are not the same.

**When Schools using Back-to-Front Maths books and at least one day of Professional Development were compared to “Like” schools from the MySchool website:**

**Percentage difference in means between grade 3 and grade 5 for the same cohort**

<i>Books + Professional Development</i>	<i>Treated group</i>	<i>Non-treated group</i>
Mean growth percentage: diff in means/grade 3 mean	26.49%	22.37%
Standard Error	0.0112	0.0049
Variance	0.00150	0.00024
Number of students sitting NAPLAN	594	
P(T<=t) two-tail, unequal variance	0.0042	
t Stat	3.3727	
P(Z<=z) two-tail	0.0007	
z	3.3721	



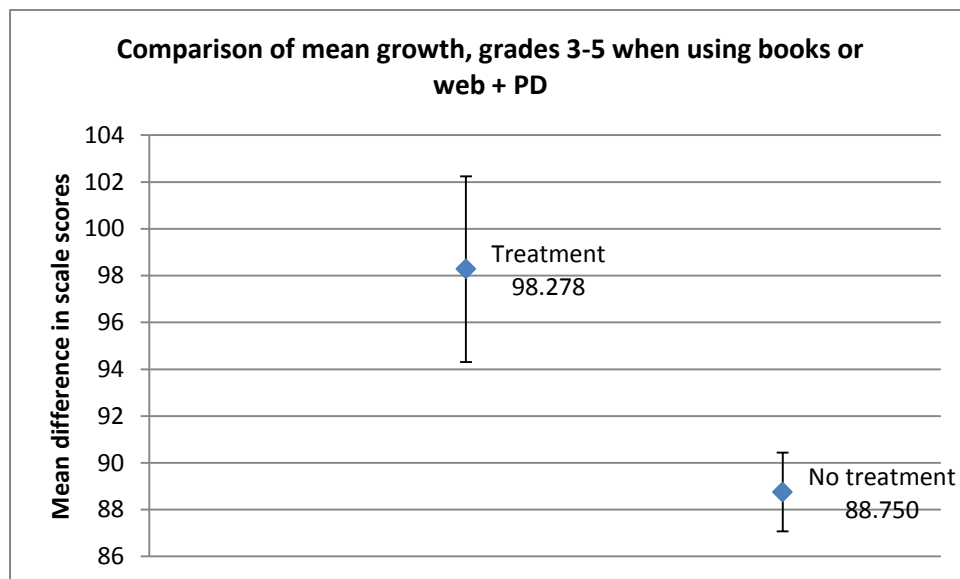
**What this means:**

B2F schools had higher cohort growth between grade 3 and 5 than statistically similar schools. The difference between the means was approximately 3.3 standard deviations, with an over 99% probability that the means are not the same.

**When Schools using Back-to-Front Maths books or web and at least one day of Professional Development were compared to “Like” schools:**

**Absolute difference in means between grade 3 and grade 5 for the same cohort**

<i>B2F books or web + Professional Development</i>	<i>Treatment</i>	<i>No treatment</i>
Mean absolute growth	98.278	88.750
Standard Error	3.966	1.682
Number of students sitting NAPLAN	1047	unknown
Variance	283.154	45.267
P(T<=t) two-tail, unequal variance	0.0372	
t Stat	2.2116	
P(Z<=z) two-tail	0.0270	
z	2.2116	

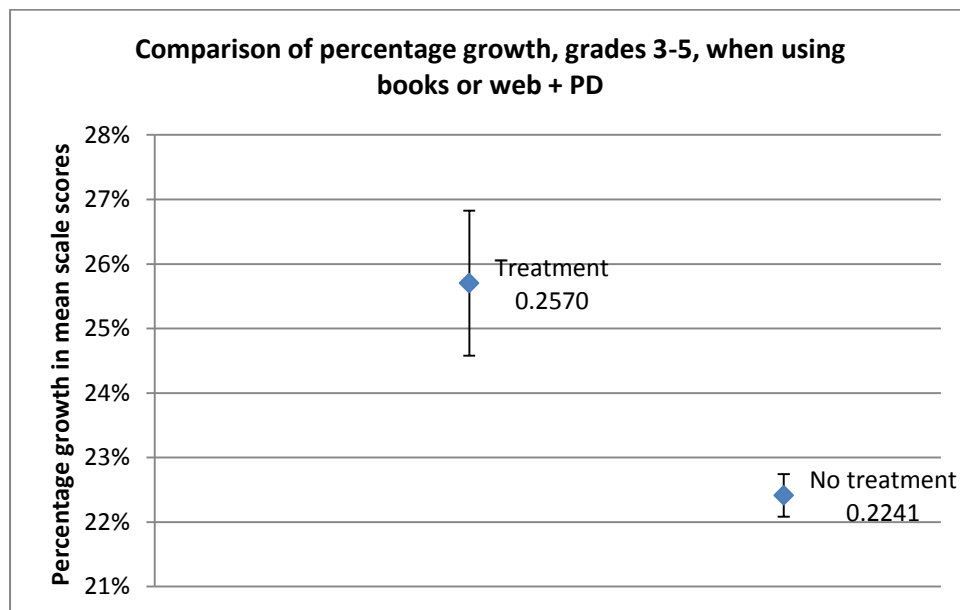


**What this means:**

B2F schools had higher cohort growth between grade 3 and 5 than statistically similar schools. The difference between the means was approximately 2.2 standard deviations, with an over 95% probability that the means are not the same.

**Percentage difference in means between grade 3 and grade 5 for the same cohort**

<i>B2F books or web + Professional Development</i>	<i>Treatment</i>	<i>No treatment</i>
Mean % growth	25.70%	22.41%
Standard Error	0.0112	0.0033
Number of students sitting NAPLAN	1047	unknown
P(T<=t) two-tail, unequal variance	0.0109	
t Stat	2.8065	
P(Z<=z) two-tail	0.0050	
z	2.8065	



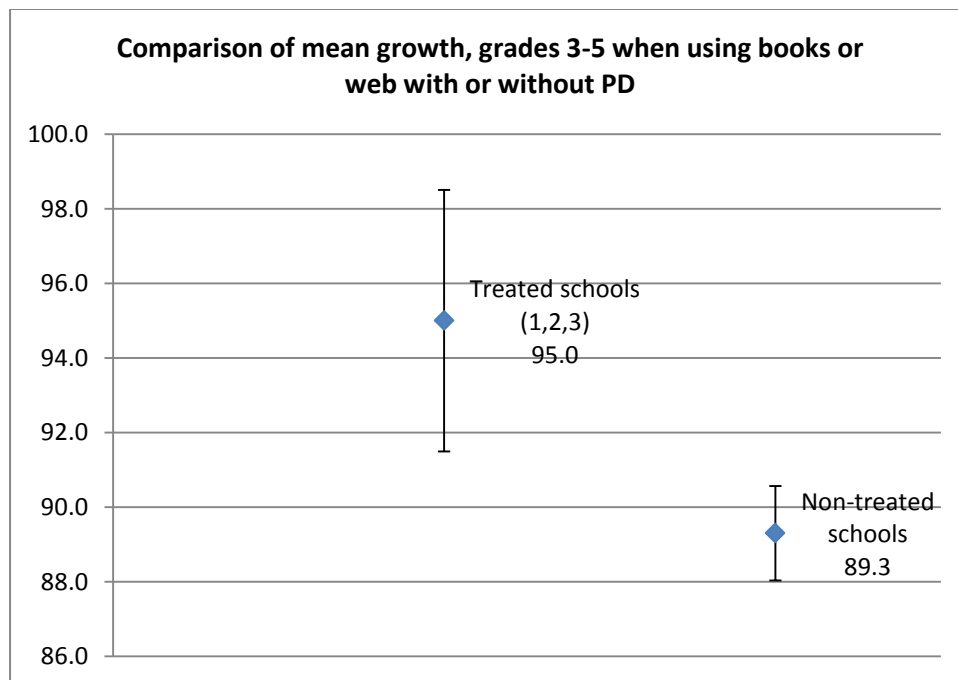
**What this means:**

B2F schools had higher percentage cohort growth between grade 3 and 5 than statistically similar schools. The difference between the means was approximately 2.8 standard deviations, with an over 95% probability that the means are not the same.

When Schools using Back-to-Front Maths books or web (including those with no Professional Development) were compared to “Like” schools:

Absolute difference in means between grade 3 and grade 5 for the same cohort

<i>B2F books or web +/- Professional Development</i>	<i>Treatment</i>	<i>No treatment</i>
Mean	95.0	89.3
Standard Error	3.506	1.263
Variance	319.600	36.676
t Stat	1.5284	
P(T<=t) two-tail	0.1366	
z	1.5284	
P(Z<=z) two-tail	0.1264	



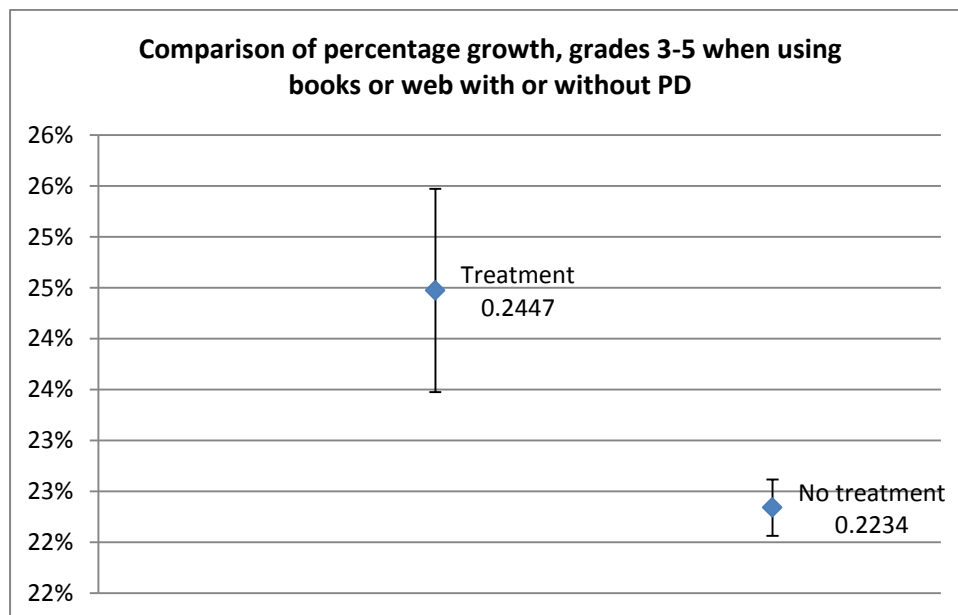
**What this means:**

Even though the means look different (approx. 1.5 standard deviations), this is not statistically significant.

**When Schools using Back-to-Front Maths books or web (including those with no Professional Development) were compared to “Like” schools:**

**Percentage difference in means between grade 3 and grade 5 for the same cohort**

<i>B2F books or web +/- Professional Development</i>	<i>Treatment</i>	<i>No treatment</i>
Mean % growth	24.47%	22.34%
Standard Error	0.0100	0.0028
Variance	0.00259	0.00016
Number of students sitting NAPLAN	1395	unknown
t Stat	2.0258	
P(T<=t) two-tail, unequal variance	0.052	
z	2.0256	
P(Z<=z) two-tail	0.0428	



**What this means:**

B2F schools (implementing with or without Professional Development) had higher percentage cohort growth between grade 3 and 5 than statistically similar schools. The difference between the means was approximately 2 standard deviations, with a 95% probability that the means are not the same.