

The background features several overlapping watercolor-style shapes in shades of blue, teal, and light green. Scattered throughout are numerous small, dark blue dots of varying sizes. At the bottom center, there are faint, stylized line drawings of what appear to be fingers or abstract shapes.

New Curriculum Evaluation

GROUP 3I



1. Survey

Demographic Survey



In which school district are you participating in the CLC program?


- ☐ Beaverton
- ☐ Camas
- ☐ Lake Oswego
- ☐ Ridgefield
- ☐ Riverdale
- ☐ Sherwood
- ☐ St. Paul
- ☐ Wilsonville
- ☐ Other: _____

Which school grade you are in?

- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10
- ☐ 11
- ☐ 12
- ☐ Other: _____

Do you have equipment (laptop, desktop, tablet, phone) that have access to online courses?

- ☐ Yes
- ☐ No
- ☐ I have other devices



Have you ever attend any form of online education program before?

☐ Yes

☐ No

How much time do you spend studying outside of class each week?

☐ 0 - 1 hour

☐ 1 - 2 hours

☐ 2 - 3 hours

☐ 3 - 4 hours

☐ 4 - 5 hours

☐ 5 - 6 hours

☐ 6 - 7 hours

☐ more than 7 hours

Attitude Survey



Please indicate your preference between Cobblestone Learning Center's Skills and Refresh programs.

- ☐ CLC's Skills program
- ☐ CLC's Refresh program

Please indicate your preference for test-taking locations.

- ☐ In-Person
- ☐ Remote

How important do you consider your interaction with an instructor during class time?

- | | 1 | 2 | 3 | |
|--|-----------------------|-----------------------|-----------------------|--|
| Not important, I don't interact with the professor during class. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very important, I value in-person interactions with my instructor. |

Indicate the frequency with which you utilize online learning platforms such as YouTube, Khan Academy and others.

- ☐ 1: I do not use learning platforms.
- ☐ 2: I utilize online learning platforms somewhat frequently.
- ☐ 3: I utilize online learning platforms very frequently.
- ☐ 4: Online learning platforms are my primary learning source.

A large, irregular teal watercolor splash serves as a background for the title. It has a darker, more saturated teal center that fades into a lighter, misty teal towards the edges. The texture is soft and painterly.

2. Analysis

A decorative design featuring dark teal dots of various sizes scattered across the page. A thin, dark teal line curves from the top right towards the bottom right, ending in a series of three loops.

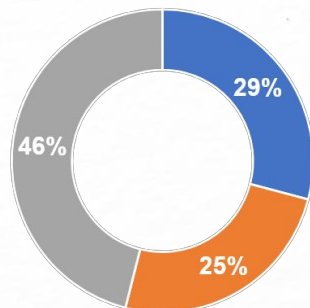
There is Difference in the Number of Students Attending Programs with Largest Amount in Program A

	Lake Oswego	Camas	Riverdale	St. Paul (Control)
Program	A	B	C	Current
Students	1217	769	657	786
Program Length	47.18	46.97	47.07	46.83

Finding:

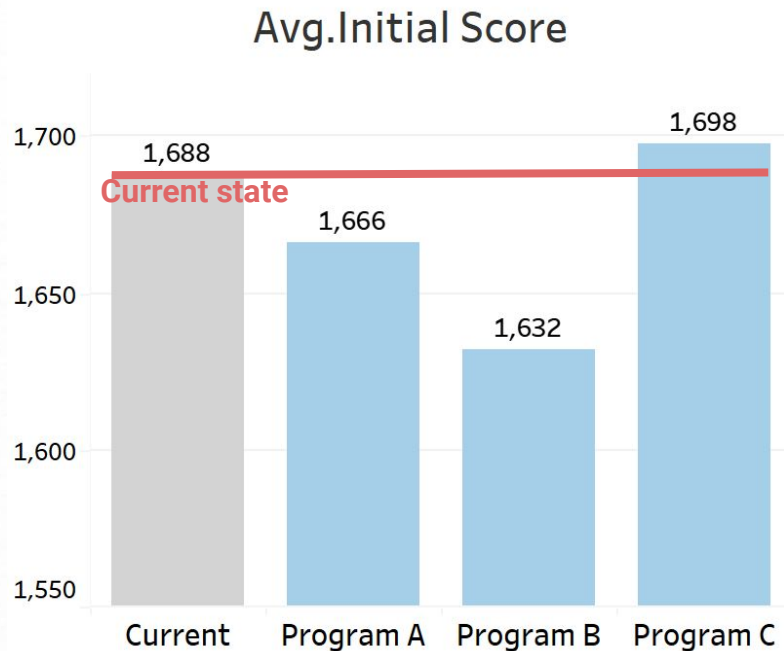
- The students attended A program are 65% more than the other three districts.
- The average length of four programs is similar.

Proportion of students



■ Camas ■ Riverdale ■ Lake Oswego

The Average Total Score Before Taking the Program

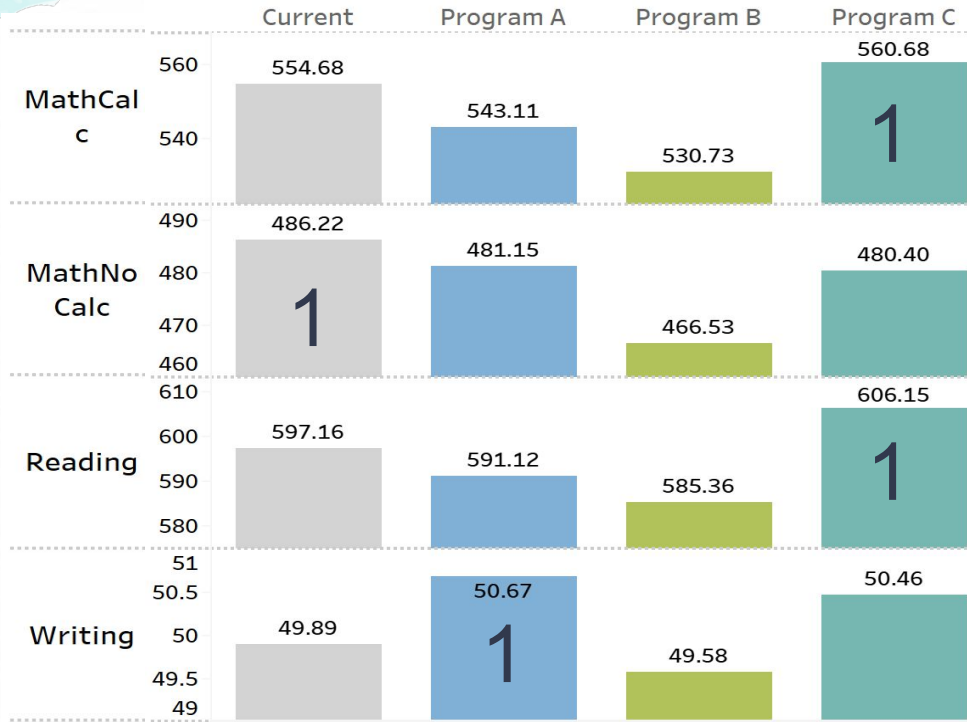


Finding:

- As for the total score, students in **Program C** have highest initial score before taking the program, which is higher than the current state.

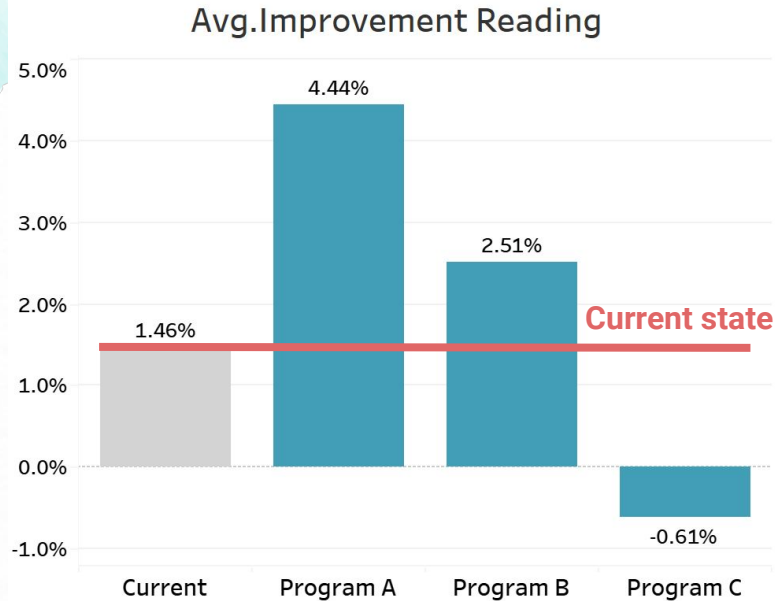
The Average Score of Different Subjects Before Taking the Program

Avg.Score of different subjects



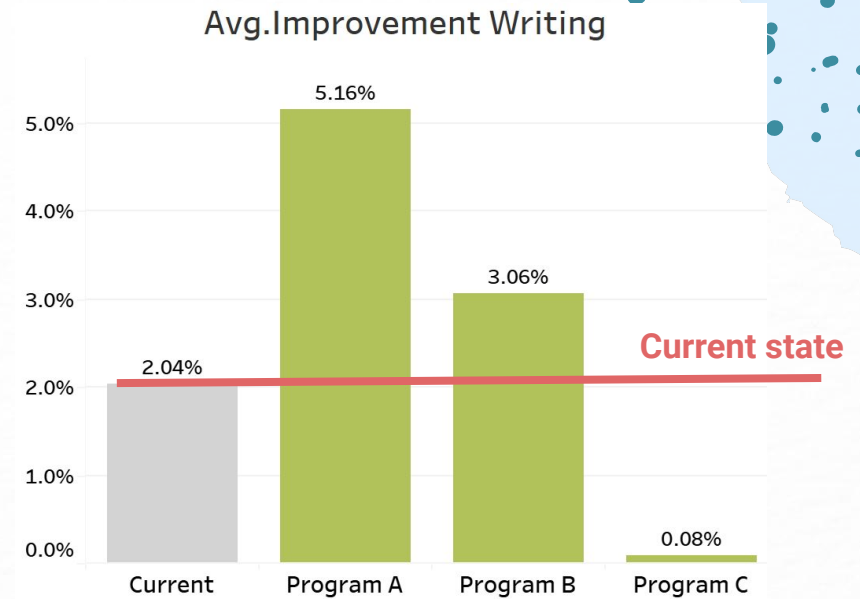
- Students in Program C perform best in Math Calculation & Reading
- Students in Program A perform best in Writing
- Students in Current Program perform best in MathNoCalc
- Students in Program B perform worst in all subjects

Performance of Programs on Art courses



The rate of improvement in Writing :
A > B > Current > C

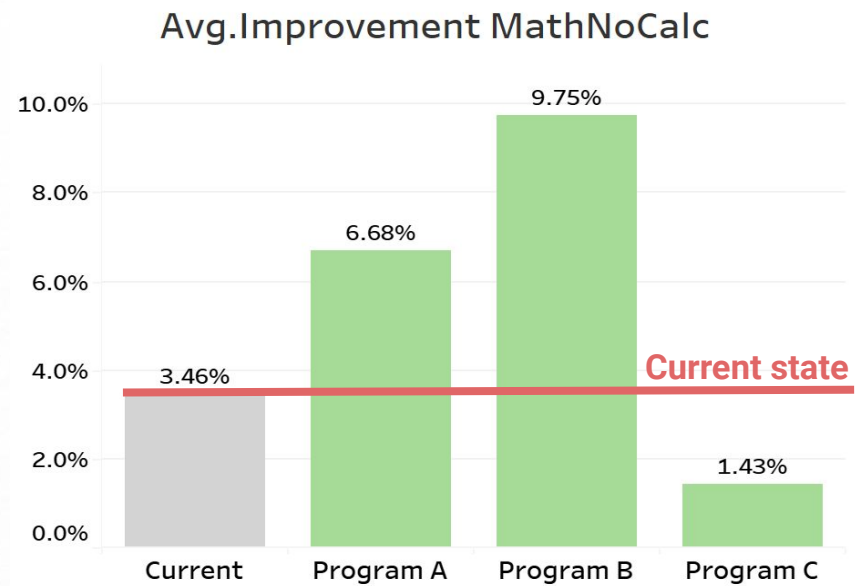
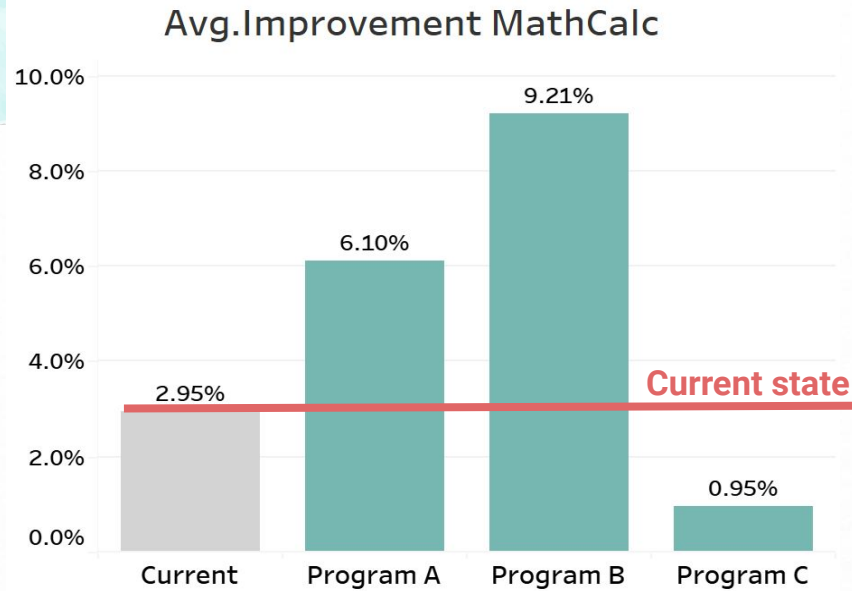
Conclusion: Choose program A&B



The rate of improvement in Reading :
A > B > Current > C

Conclusion: Choose program A&B

Performance of Programs on Science courses



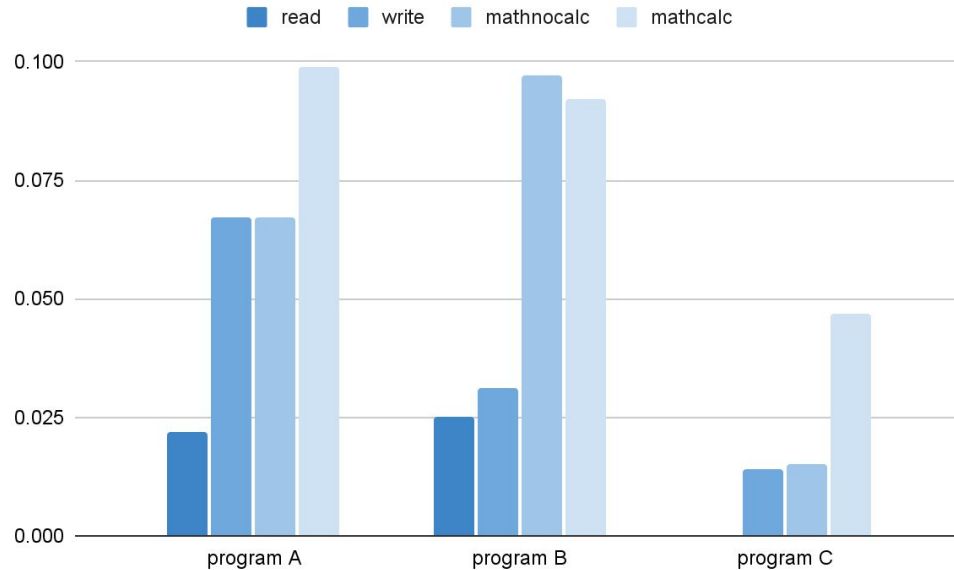
The rate of improvement in MathCalc :
 $B > A > \text{Current} > C$

Conclusion: Choose program A&B

The rate of improvement in MathNoCalc :
 $B > A > \text{Current} > C$

Conclusion: Choose program A&B

Performance of Different Programs

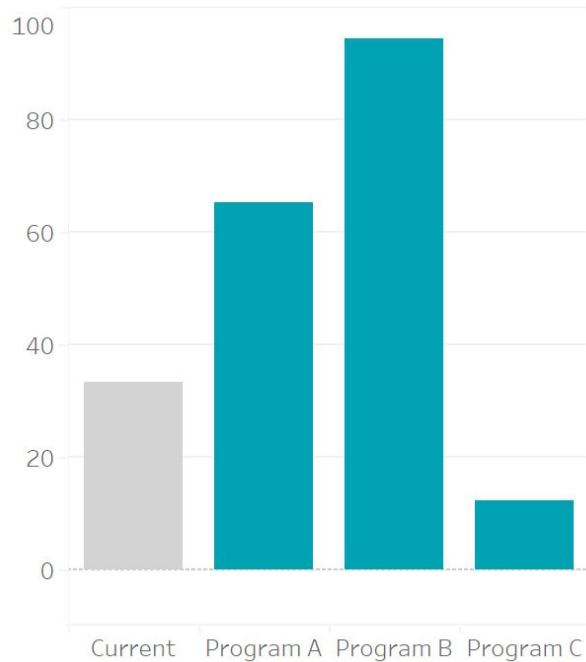


The effectiveness ranking:
program A > program B > Program C

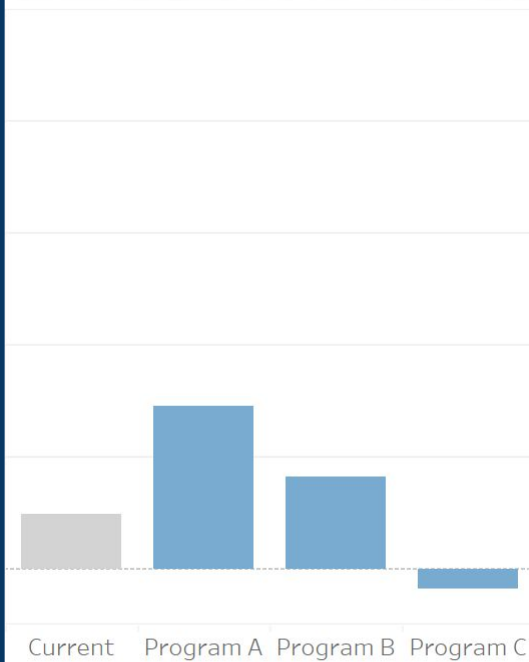
Overall, Science courses are easier to improve than Art courses.

Conclusion

MathNoCalc+MathCalc



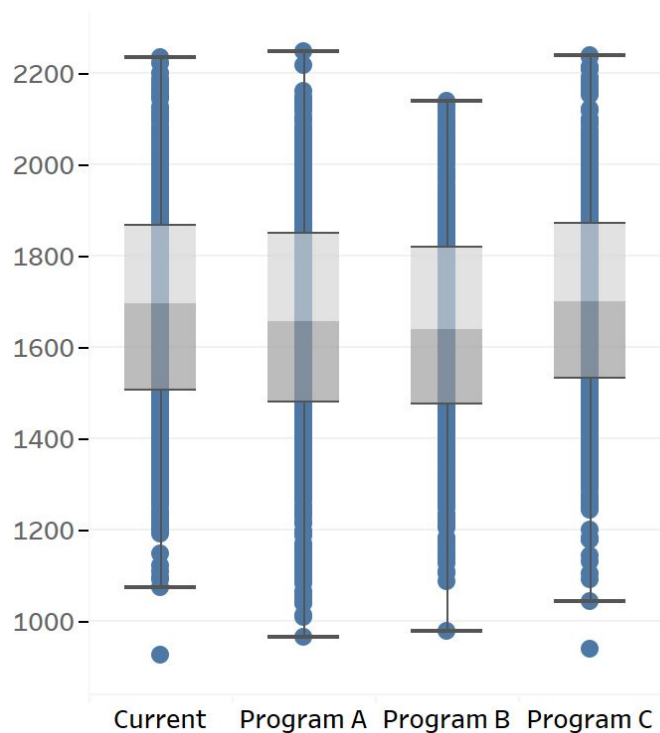
Reading+Writing



- Math scores, Program B performs best.
- Reading and Writing scores, Program A performs best.
- If a student wants to improve their overall score, then B would recommend more.

Experimental Design Suggestion

Box line plots of the four samples



- Violation of the major assumption of no differences between students.
- One-way ANOVA (analysis of variance) support the differences between samples of students from different regions.

Experimental Design Suggestion

1) Quasi-experimental designs

	Before	After treatment
St.Paul	Current	Current
Lake Oswego	Current	Program A
Camas	Current	Program B
Riverdale	Current	Program C

Add a column of pre-treated controls for comparison to validate the effect of the new three programs

2) RCT (randomized control experiments)

- St.Paul
 - Lake Oswego
 - Camas
 - Riverdale
- 

	Treatment
Group A	Current
Group B	Program A
Group C	Program B
Group D	Program C

Students from the four regions were mixed and randomly divided into four groups



THANKS !

Appendix

Shapiro-wilk normality test

```
data: data_intake$sum  
W = 0.99737, p-value = 1.236e-05
```

The total score is consistent with the assumption of normality

```
      Df Sum Sq Mean Sq F value Pr(>F)  
data$district    3 4948165 1649388    6674 <2e-16 ***  
Residuals      3407   841981     247  
---  
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

one-way analysis of variance, differences between samples of students from different regions

Tukey multiple comparisons of means 95% family-wise confidence level

```
Fit: aov(formula = data$diff_sum ~ data$district)
```

```
$`data$district`
```

	diff	lwr	upr	p adj
Lake Oswego-Camas	-16.44335	-18.30470	-14.58199	0
Riverdale-Camas	-101.89742	-104.06032	-99.73452	0
St. Paul-Camas	-67.51677	-69.56623	-65.46731	0
Riverdale-Lake Oswego	-85.45407	-87.42805	-83.48010	0
St. Paul-Lake Oswego	-51.07342	-52.92240	-49.22444	0
St. Paul-Riverdale	34.38065	32.22839	36.53291	0

All two-by-two comparisons differed

Appendix

```
call:
lm(formula = diff_sum ~ district, data = data)

Residuals:
    Min       1Q   Median       3Q      Max
-54.481 -10.038  -0.038   9.962  62.519

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)      42.9644    0.5607   76.62  <2e-16 ***
districtLake Oswego  51.0734    0.7194   71.00  <2e-16 ***
districtCamas      67.5168    0.7974   84.67  <2e-16 ***
districtRiverdale  -34.3807    0.8374  -41.06  <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 15.72 on 3407 degrees of freedom
Multiple R-squared:  0.8546,    Adjusted R-squared:  0.8545
F-statistic: 6674 on 3 and 3407 DF,  p-value: < 2.2e-16
```