Assessing Formative Assessment

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Assessment Faire – March 29th, 2019

Purpose of the Assessment

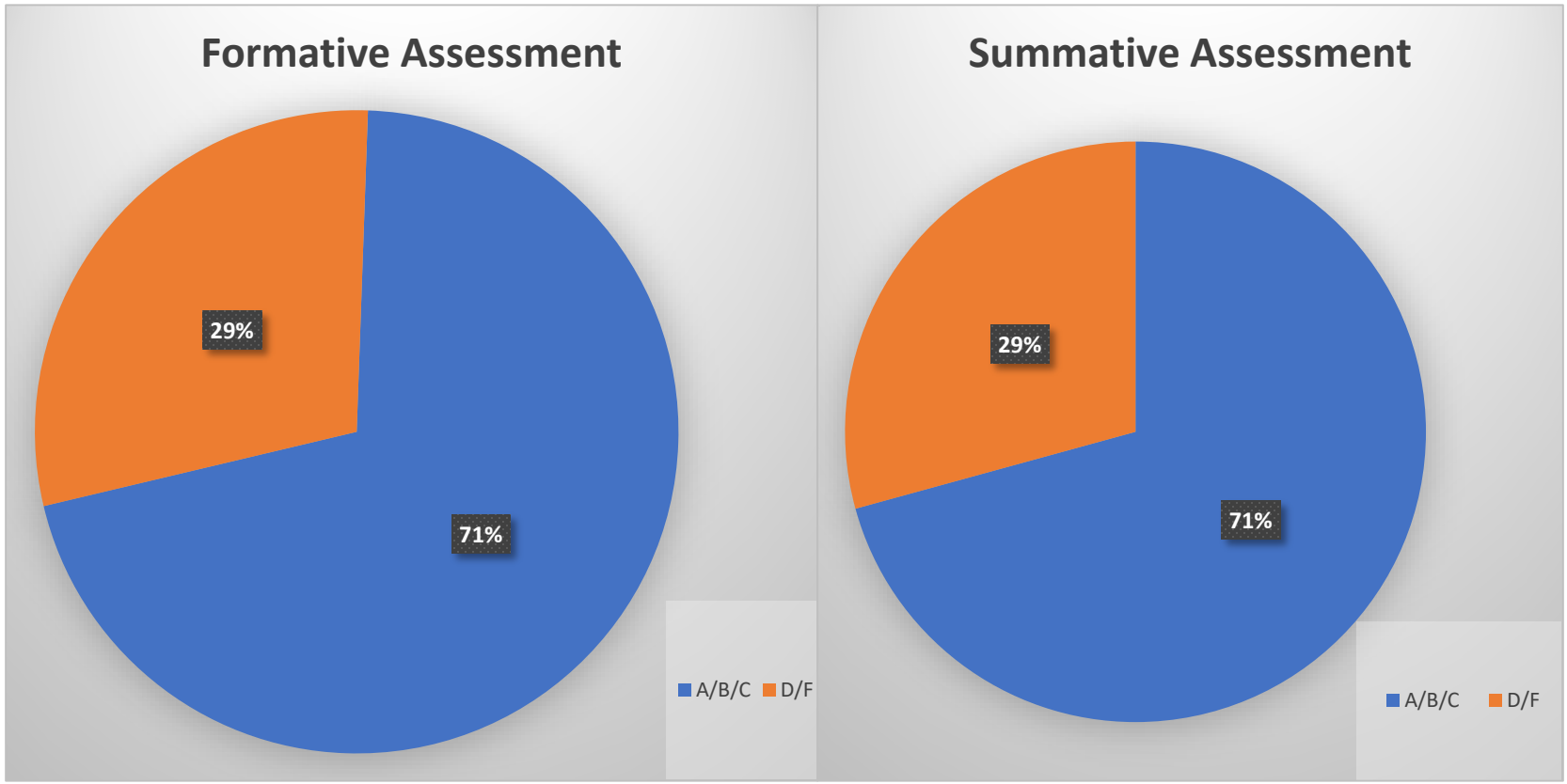
- Principles of Macroeconomics (Econ 2020) is required for all majors at CBE
- Grades for most sections are typically based on 3-4 exams
- High DFW rates
- Hence, a need for formative assessments

The Structure

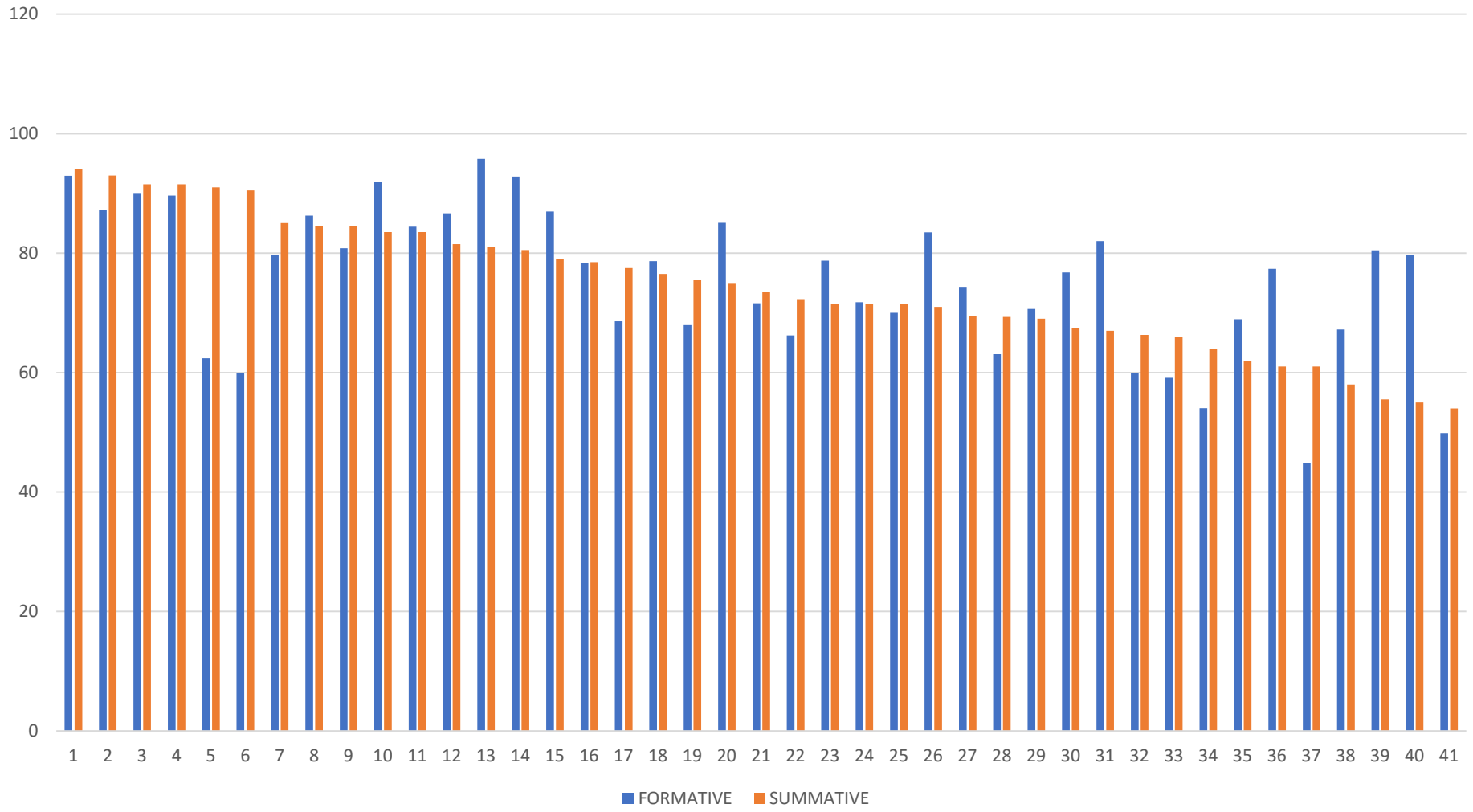
- Homework Assignments 24%
- Class Assignments 17%
- Prior Knowledge Surveys 7%
- Chapter Quizzes 17%
- Exams 35%

- All assignments comprise of Multiple Choice type questions

Grade Distribution: Formative to Summative



Looking at individual students



Formative vs. Summative

	% of correct responses in HW/Quiz	% or correct responses in Exam	Change
Question 1	85%	83%	-2
Question 2	56%	56%	0
Question 3	63%	76%	13
Question 4	40%	70%	30

Comparing Across Majors across Cohorts

	MARKETING		MANAGEMENT		FINANCE AND LAW		ECON & STAT		ACCOUNTING		CIS	
	Fall 2016	Fall 2017	Fall 2016	Fall 2017	Fall 2016	Fall 2017	Fall 2016	Fall 2017	Fall 2016	Fall 2017	Fall 2016	Fall 2017
A	12.5	10	0	8.33333333	22.2222222	20	0	0	0	0	0	0
B	12.5	20	33.3333333	41.6666667	22.2222222	20	50	50	0	100	100	50
C	62.5	40	44.4444444	41.6666667	55.5555556	50	50	50	50	0	0	50
D	12.5	20	22.2222222	8.33333333	0	10	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0
W	0	10	0	0	0	0	0	0	50	0	0	0
	12.5	30	22.2222222	8.33333333	0	10	0	0	50	0	0	0

Analysis

Linear Regression									
Regression Statistics									
R		0.52409							
R-Squared		0.27467							
Adjusted R-Squared		0.25608							
S		9.56144							
MSE		91.4211							
RMSE		9.56144							
MAPE		9.3759							
DW		0.47556							
PRESS		3,909.14							
PRESS RMSE		9.76447							
Predicted R-Squared		0.20475							
N		41							
SUMMATIVE = 39.04889 + 0.46927 * FORMATIVE									
ANOVA									
	d.f.	SS	MS	F	p-value				
Regression	1	1,350.19	1,350.19	14.76889	0.00044				
Residual	39	3,565.42	91.4211						
Total	40	4,915.61							
	Coefficient	Standard Erro	LCL	UCL	t Stat	p-value	H0 (5%)	VIF	TOL
Intercept	39.04889	9.34109	20.15474	57.94304	4.18033	0.00016	rejected	**	**
FORMATIVE	0.46927	0.12211	0.22228	0.71626	3.84303	0.00044	rejected	**	**
T (5%)	2.02269								
LCL - Lower limit of the 95% confidence interval									
UCL - Upper limit of the 95% confidence interval									
** - Requires Pro version, please upgrade.									

Conclusion

- Formative assessments such as quizzes, homework, classwork enable students to perform better in exams (summative assessments)

- For those questions which students saw repeatedly through the semester (worded in various ways) allowed for significant improvement.

- A combination of formative and summative assessment lowers the risk of DFW for students.

Thank you!

Any Questions?