

# Improving Student Persistence: Co-requisite Education

# **CPT Change Score Comparison**

COMPARED	9	ENROLLED		CHANGE SCORE						
	FALL	N CASL	N (IA)	N CASL	N (IA)	AVG (CASL)	AVG (IA)	t	P-VAL**	
Intermediate Algebra (IA)	2015	111	133	72	97	22.2	11.5	3.474	< 0.001	
Intermediate Algebra (IA)	2016	106	106	73	65	15.0	18.7	-1.254	0.894	
Intermediate Algebra (IA)	2017	196	45	132	33	12.0	16.6	-1.861	0.968	
		N FCSL	N (DW)	N FCSL	N (DW)	AVG (FCSL)	AVG (DW)	t	P-VAL	
Development al Writing (DW)	2015	30	97	26	73	19.1	13.9	1.685	0.045	
Development al Writing (DW)	2016	78	52	73	36	11.8	12.7	0.323	0.374	
Development al Writing (DW)	2017	66	44	52	38	12.3	7.6	1.709	0.045	
	Intermediate Algebra (IA) Intermediate Algebra (IA) Intermediate Algebra (IA)  Development al Writing (DW) Development al Writing (DW) Development al Writing (DW) Development	Intermediate Algebra (IA) Intermediate Algebra (IA) Intermediate Algebra (IA) Intermediate Algebra (IA)  Development al Writing (DW) Development al Writing (DW) Development Development al Writing (DW) Development	COMPARED TO  Intermediate Algebra (IA)  Development al Writing (DW) Development Development (DW)	COMPARED TO  Intermediate Algebra (IA)  Intermed	COMPARED TO         FALL TO         N CASL CASL         N (IA)         N CASL CASL           Intermediate Algebra (IA)         2015         111         133         72           Intermediate Algebra (IA)         2016         106         106         73           Intermediate Algebra (IA)         2017         196         45         132           N FCSL         N N N N N N FCSL         N N N N N N N N N N N N N N N N N N N	COMPARED TO         FALL TO         N CASL CASL CASL         N (IA) CASL CASL         N (IA) CASL CASL         N (IA)           Intermediate Algebra (IA)         2015         111         133         72         97           Intermediate Algebra (IA)         2016         106         106         73         65           Intermediate Algebra (IA)         2017         196         45         132         33           N FCSL         N N N N N FCSL         N (DW)         N (DW)         N (DW)         N (DW)           Development al Writing (DW)         2016         78         52         73         36           (DW)         Development         2016         78         52         73         36           (DW)         Development         2016         78         52         73         36	COMPARED TO         FALL TO         N (IA) CASL (CASL)         N (IA) CASL (CASL)         N (IA) (CASL)         AVG (CASL)           Intermediate Algebra (IA)         2015         111         133         72         97         22.2           Intermediate Algebra (IA)         2016         106         106         73         65         15.0           Intermediate Algebra (IA)         2017         196         45         132         33         12.0           N R SCSL (DW)         N N N N N N N N N N N SCSL (DW)         N AVG (FCSL)         (FCSL)         19.1           Development al Writing (DW)         2015         30         97         26         73         19.1           Development al Writing (DW)         2016         78         52         73         36         11.8           Development Development         2016         78         52         73         36         11.8	COMPARED TO         FALL TO         N (IA) CASL CASL         N (IA) CASL (CASL)         N (IA) (CASL)         AVG (IA) (CASL)           Intermediate Algebra (IA)         2015         111         133         72         97         22.2         11.5           Intermediate Algebra (IA)         2016         106         106         73         65         15.0         18.7           Intermediate Algebra (IA)         2017         196         45         132         33         12.0         16.6           N FCSL         N (DW)         N RCSL         N (DW)         AVG (DW)           Development al Writing (DW)         2015         30         97         26         73         19.1         13.9           Development al Writing (DW)         2016         78         52         73         36         11.8         12.7           Development Development (DW)         2016         78         52         73         36         11.8         12.7	COMPARED TO   FALL   N   CASL   N (IA)   N   CASL   N (IA)   AVG (CASL)   AVG (IA)   t	

\*\*P-value for CLSL > IA,

FCSL > DW

# **Pass Rate Comparison**

		ENR	OLLED	PASS RATE - COMPLETED CLASS							
COMPARED TO	FAL L	N CASL	N (IA/CL)	N CASL	N (IA/CL)	% (CASL)	% (IA/CL)	z	P-VAL		
Intermediate Algebra (IA)	A-13474-RESSON - 12	82	114	74	89	90.2	78.1	2.399	0.008		
College Level (CL)*	2013	82	481	74	395	90.2	82.1	2.188	0.014		
Intermediate Algebra (IA)	2016	87	89	74	59	85.1	66.3	2.978	0.002		
College Level (CL)*	2010	87	503	74	429	85.1	85.3	-0.056	0.522		
Intermediate Algebra (IA)	2017	170	42	148	35	87.1	83.3	0.591	0.277		
College Level (CL)*	2017	170	455	148	403	87.1	88.6	-0.508	0.694		
		N FCSL	N (DW/FC)	N FCSL	N (DW/FC)	% (FCSL)	% (DW/FC)	z	P-VAL		
Developmental Writing (DW)	2015	27	82	27	69	100.0	84.1	3.931	< 0.001		
Freshman Comp I (FC)	2015	27	600	27	529	100.0	88.2	8.974	< 0.001		
Developmental Writing (DW)	2016	76	40	73	35	96.1	87.5	1.504	0.066		
Freshman Comp I (FC)	2010	76	596	73	549	96.1	92.1	1.581	0.057		
Developmental Writing (DW)	2017	53	41	46	35	86.8	85.4	0.198	0.422		
Freshman Comp I (FC)	2017	53	587	46	522	86.8	88.9	-0.442	0.671		
	Intermediate Algebra (IA) College Level (CL)* Intermediate Algebra (IA) College Level (CL)* Intermediate Algebra (IA) College Level (CL)*  Intermediate Algebra (IA) College Level (CL)*  Developmental Writing (DW) Freshman Comp I (FC) Developmental Writing (DW)	Intermediate Algebra (IA) College Level (CL)*  Developmental Writing (DW) Freshman Comp I (FC) Developmental Writing (DW) Freshman	COMPARED TO         FAL L         N CASL           Intermediate Algebra (IA)         2015         82           College Level (CL)*         82         82           Intermediate Algebra (IA)         2016         87           College Level (CL)*         87         170           College Level (CL)*         2017         170           College Level (CL)*         170         N           FCSL         N         FCSL           Developmental Writing (DW)         2015         27           Freshman Comp I (FC)         27         76           Developmental Writing (DW)         76         76           Freshman Comp I (FC)         76         76           Developmental Writing (DW)         76         76           Freshman         2017         53           Freshman         2017         53	TO	COMPARED TO	COMPARED TO	COMPARED   TO	COMPARED TO	COMPARED TO		

Mathematics

\*\*P-value for CLSL > IA/CL FCSL > DW/FC

**Retention Rate Comparison** 

	COMPARED	50	ENROLLED		RETENTION RATE							
MATH		FALL	N CASL	N (IA/CL)	RETURN	N CASL	N (IA/CL)	% (CASL)	% (IA/CL)	z	P- VAL	
College Level* with Suppleme ntal Lab (CASL)	Intermediate Algebra (IA)	2015	111	133	2016	60	69	54.1	51.9	0.339	0.367	
	College Level (CL)*		111	581		60	354	54.1	60.9	-1.336	0.909	
	Intermediate Algebra (IA)	2016	106	106	2017	55	62	51.9	58.5	-0.969	0.834	
	College Level (CL)*		106	624		55	386	51.9	61.9	-1.907	0.972	
ENGLISH			N FCSL	N (DW/FC)	RETURN	N FCSL	N (DW/FC)	% (FCSL)	% (DW/FC)	z	P- VAL	
Freshman Comp I with Suppleme ntal Lab (FCSL)	Developmental Writing (DW)	2015	30	97	2016	16	51	53.3	52.6	0.073	0.471	
	Freshman Comp I (FC)		30	657		16	390	53.3	59.4	-0.648	0.741	
	Developmental Writing (DW)	2016	78	52	2017	39	23	50.0	44.2	0.647	0.259	
	Freshman Comp I (FC)		78	646		39	390	50.0	60.4	-1.735	0.959	
*College Al	gebra or Applied	2	70	040	2	9 (8	390		ly significar		0.9	

College Algebra of Applied

Mathematics \*\*P-value for CLSL > IA/CL, FCSL > DW/FC Oklahoma's partnership with Complete College America requires that 75% of all students requiring developmental education be involved in a co-requisite approach. In 2015, NSU piloted a co-requisite model for Mathematics and English.

Co-Requisite Education: students meeting the following requirements are given the option of enrolling in the developmental course, OR the college level course with a co-requisite lab:

ACT sub-scores < 19

0.05

English CPT 60-79, Math CPT 44-74

## **Key Findings**

#### Ha 1: Co-req Change Scores > Developmental Change Scores

CASL change scores significantly greater than IA for 2015 only. However, average IA change scores were actually higher than those for CASL in 2017. FCSL change scores were significantly greater than DW in 2015 and 2017.

## Ha 2: Co-req Pass rates > Developmental Pass Rates; Co-req Pass Rates > College Level Pass Rates

In 2015, CASL students had significantly higher pass rates than both IA and CL. The pass rate for CASL was also significantly higher than IA in 2016. Similarly FCSL pass rates were higher than both DW and FC in 2015. It was encouraging that the pass rates for the co-req groups were comparable to the pass rates for the college level math and Freshman Comp I students even though significant differences weren't detected.

## Ha 3: Co-req Retention Rate > Developmental Retention Rate; Co-req **Retention Rates > College Level Retention Rates**

No significant differences between CASL and IA retention rates nor between FCSL and DW rates were found. However, the retention rates for both college level math and Freshman Comp I tended to be higher in both years.

#### **NEXT STEPS**

- 1. We will continue to refine the logistics of the co-requisite offerings.
- 2. To better understand the lower than expected retention rates, we plan to modify the data file to include students who enrolled the following fall at another institution.