

Sample University and Smarter Measure Subscale Relations

by

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The sample of data contained 11,791 students which took either hybrid (3,660), on-campus (6,892), or online (1,239) coursework. This report contains an analysis for online students *only* who reported Sample University data and had Smarter Measure Readiness subscale scores. The analysis therefore only utilized 10.5 % of the total data (Table 1), but was intended to focus on students who took online courses. Results at the subscale level are intended to provide a clearer indication of student attributes related to online course success variables (School Status, Grade, GPA, Credit Hours Earned).

Table 1. Descriptive Statistics for Course Delivery Type

Course Delivery	Frequency	Percent
Hybrid	3,660	31.0
On-Campus	6,892	58.5
Online	1,239	10.5
Total	11,791	100

School Status

The number of online students who were active, graduated, withdrew, dismissed, transferred, or other (period of non-enrollment, rescheduled, leave of absence, original enrollment) are reported in Table 2. The number of online students active or who graduated represented approximately 1/3 (34 %) of the total students taking online courses (positive outcome). Almost 2/3 (65.2 %) of the online students had negative outcomes (withdrew,

dismissed, transfer). Two groups were formed based on recoding the School Status variable [Outcome: 1 = positive (active/graduated); 2 = negative (withdrew/dissmissed/transfer)]. The sample sizes were: Positive Outcome = 421 (34.3 %) and Negative Outcome = 807 (65.7 %).

Table 2. School Status

School Status	Frequency	Percent
Active	344	27.8
Graduated	77	6.2
Withdrew	668	53.9
Dismissed	95	7.7
Transfer	44	3.6
Other	11	.8
Total	1,239	100.0

Sample University variables

The Sample University success variables comprised: GPA, Credit Hours Earned, and Letter Grade. The online student's GPA ranged from 0.0 to 4.0 with a Mean = 2.29 and SD = 1.32, so the 1,239 students had a C average. For 1,202 online students the number of credit hours earned ranged from 0.0 to 184 with a Mean = 39.91 and SD = 37.56. This indicates that 68% of the online students only generated from 2 to 77 credit hours. The letter grade distribution (A, B, C, D, F, TC, W, WF, PR) indicated that 48.9 % were passing (A, B, C) while 21.1 % were failing (D, F, Other) with 8.2 % not reported (n = 101) and 21.8 % (n = 270) receiving transfer credit (TC) in Table 3. Two groups were formed based on the Letter Grade (Result: 1 = pass, 2 = fail) with Transfer Credit and Not Reported excluded (N = 371). The group sample sizes were: Pass = 606 (69.8 %) and Fail = 262 (30.2 %).

Table 3. Letter Grade Distribution

Letter Grade	Frequency	Percent
A	385	31.1
B	140	11.3
C	81	6.5
D	37	3.0
F	178	14.4
Transfer Credit	270	21.8
Other (W,WF,PR)	47	3.7
Not Reported	101	8.2
Total	1239	100

SmarterMeasure Readiness Domain Subscales

The online learner Readiness Domains are Life Factors, Learning Styles, Personal Attributes, Technical Competency, and Technical Knowledge. The Readiness Domains with their subscales are included with the descriptive statistics for each subscale in Table 4. The *Life Factor* subscales all had mean values above the expected central value, that is, the means were greater than 10.0 points. *Time* and *Resources* had more variability around their mean values. The *Learning Style* subscales all had mean values above the expected central value, that is, the means were greater than 5.0 points. *Visual*, *Physical*, and *Verbal* had more variability around their mean values. The *Personal Attribute* subscales all had mean values above the expected central value, that is, the means were greater than 8.0 points. *Procrastination* had more variability around the mean value. The *Technical Competency* subscales all had mean values above the expected central values, that is, the means were greater than 25.0 points. *Internet Competency* had slightly more variability around the mean value. The *Technical Knowledge* subscales all had mean values above their expected central values. *Technology Usage* and *Technology in Your Life* had more variability around their means. The response rates for the subscales varied from a low of N = 457 (*Life Factor* subscales) to a high of N = 1,142 (*Personal Attribute* subscales), so analyses will be conducted for each set of subscales separately.

Table 4. Readiness Subscale Descriptive Statistics (N = 1,239 online students)

Readiness Subscale Indicator	Mean	Standard Deviation
Life Factors (0-100 pts); N = 457		
Time (20pts)	14.61	3.221
Place (20pts)	16.61	1.882
Reason (20pts)	18.55	1.928
Resources (20pts)	15.05	3.310
Skills (20pts)	14.54	2.623
Learning Styles (0-70 pts); N = 1122		
Visual (10 pts)	6.86	2.192
Social (10 pts)	7.44	1.816
Physical (10 pts)	6.59	2.041
Aural (10 pts)	7.39	1.941
Verbal (10 pts)	6.83	2.091
Solitary (10 pts)	6.81	1.724
Logical (10 pts)	6.81	1.952
Personal Attributes (0-96 pts); N = 1142		
Academic (16 pts)	13.74	1.701
Help Seeking (16 pts)	12.02	1.673
Persistence (16 pts)	12.27	1.705
Procrastination (16 pts)	12.39	2.304
Time Management (16 pts)	14.62	1.548
Locus of Control (16 pts)	10.14	1.682
Technical Competency (0 -100 pts); N=1052		
Computer Competency (50 pts)	46.33	5.872
Internet Competency (50 pts)	46.44	6.448
Technical Knowledge (0-64 pts); N = 1037		
Technology Usage (21 pts)	13.29	3.412
Technology in Your life (20 pts)	12.55	3.358
Technology Vocabulary (10 pts)	8.00	1.523
Personal Computer Internet (13 pts)	12.16	1.193

Mean Differences

The primary research interest was in examining the subscales in each of the Readiness Domains as they related to Sample University variables. An independent t-test was conducted for group differences on each Readiness Domain subscale at the .05 level of significance ($t\text{-test} = \text{mean difference} / \text{standard error}$). The mean differences were tested between the Outcome groups (positive vs. negative) and Result groups (pass vs. fail).

Table 5 provides a comparison of Life Factor subscales between positive versus negative outcome. *Place*, *Reason*, and *Skills* were statistically different, while *Time* and *Resources* were **not** statistically different. Table 6 shows a comparison of Life Factor subscales between pass and fail status. *Place* was the only significant difference between pass/fail students.

Table 5. Positive vs. Negative on Life Factor Subscales

Life Factors	Outcomes	N	Mean	Mean Difference	Standard Error	t	p
Time	Positive	206	14.87	.50	.30	1.67	.10
	Negative	245	14.37				
Place	Positive	206	16.96	.64	.18	3.56	.0001
	Negative	245	16.32				
Reason	Positive	206	18.75	.39	.18	2.17	.03
	Negative	205	18.36				
Resources	Positive	206	15.32	.53	.31	1.71	.10
	Negative	245	14.79				
Skills	Positive	206	14.84	.59	.25	2.36	.02
	Negative	245	14.25				

Table 6. Pass vs. Fail on Life Factor Subscales

<u>Life Factors</u>	<u>Outcomes</u>	<u>N</u>	<u>Mean</u>	<u>Mean Difference</u>	<u>Standard Error</u>	<u>t</u>	<u>p</u>
Time	Pass	231	14.53	.29	.42	.69	.49
	Fail	88	14.24				
Place	Pass	231	16.63	.55	.25	2.20	.03
	Fail	88	16.08				
Reason	Pass	231	18.54	.41	.26	1.58	.10
	Fail	88	18.13				
Resources	Pass	231	14.79	.11	.42	.26	.79
	Fail	88	14.68				
Skills	Pass	231	14.50	.26	.34	.76	.45
	Fail	88	14.24				

Table 7 provides a comparison of Learning Styles subscales between positive versus negative outcome. *Social* and *Logical* differed between positive and negative outcomes with *Social* higher on average for negative outcome students. Table 8 shows a comparison of Learning Style subscales between pass and fail status. There was no statistical difference between these two groups on the Learning Styles subscales.

Table 7. Positive vs. Negative Learning Styles Subscales

<u>Learning Styles</u>	<u>Outcomes</u>	<u>N</u>	<u>Mean</u>	<u>Mean Difference</u>	<u>Standard Error</u>	<u>t</u>	<u>p</u>
Visual	Positive	381	6.87	.03	.14	.21	.83
	Negative	731	6.84				
Social	Positive	381	7.27	-.25	.11	-2.27	.03
	Negative	731	7.52				
Physical	Positive	381	6.45	-.20	.13	-1.54	.14
	Negative	731	6.65				
Aural	Positive	381	7.27	-.19	.12	-1.58	.11
	Negative	731	7.46				
Verbal	Positive	381	6.80	-.04	.13	-.30	.75
	Negative	731	6.85				
Solitary	Positive	381	6.92	.16	.11	1.45	.15
	Negative	731	6.76				
Logical	Positive	381	6.98	.25	.12	2.08	.04
	Negative	731	6.73				

Table 8. Pass vs Fail on Learning Style Subscales

<u>Learning Styles</u>	<u>Outcomes</u>	<u>N</u>	<u>Mean</u>	<u>Mean Difference</u>	<u>Standard Error</u>	<u>t</u>	<u>p</u>
Visual	Pass	562	6.77	-.27	.18	1.50	.12
	Fail	225	7.04				
Social	Pass	562	7.41	-.01	.14	-.07	.92
	Fail	225	7.42				
Physical	Pass	562	6.56	.03	.16	.18	.87
	Fail	225	6.53				
Aural	Pass	562	7.40	-.09	.15	-.60	.53
	Fail	225	7.49				
Verbal	Pass	562	6.73	-.17	.17	-1.00	.33
	Fail	225	6.90				
Solitary	Pass	562	6.70	-.16	.14	-1.14	.25
	Fail	225	6.86				
Logical	Pass	562	6.81	.14	.15	.93	.37
	Fail	225	6.67				

Table 9 indicates that the *Academic, Help Seeking, Procrastination, Time Management,* and *Locus of Control* subscales were statistically higher on average for the positive outcome students than the negative outcome students. Ironically, there was no statistical difference between the groups on the *Persistence* subscale. Table 10 indicates that *Time Management* was the only statistical significant subscale difference between pass and fail students.

Table 9. Positive vs. Negative on Personal Attribute subscales

Personal Attributes	Outcomes	N	Mean	Mean Difference	Standard Error	t	p
Academic	Positive	386	13.97	.36	.11	3.27	.001
	Negative	746	13.61				
Help Seeking	Positive	386	12.23	.33	.10	3.30	.001
	Negative	746	11.90				
Persistence	Positive	386	12.35	.14	.11	1.27	.19
	Negative	746	12.21				
Procrastination	Positive	386	12.66	.42	.14	3.00	.004
	Negative	746	12.24				
Time Management	Positive	386	14.90	.43	.10	4.30	.0001
	Negative	746	14.47				
Locus of Control	Positive	386	10.32	.28	.10	2.80	.008
	Negative	746	10.04				

Table 10. Pass vs. Fail on Personal Attribute subscales

Personal Attributes	Outcomes	N	Mean	Mean Difference	Standard Error	t	p
Academic	Pass	569	13.65	-.10	.14	-.71	.47
	Fail	230	13.75				
Help Seeking	Pass	569	11.98	.17	.13	1.31	.19
	Fail	230	11.81				
Persistence	Pass	569	12.36	.18	.14	1.29	.17
	Fail	230	12.18				
Procrastination	Pass	569	12.45	.33	.18	1.83	.06
	Fail	230	12.12				
Time Management	Pass	569	14.68	.35	.12	2.92	.004
	Fail	230	14.33				
Locus of Control	Pass	569	10.08	.13	.13	1.00	.33
	Fail	230	9.95				

Table 12 indicates mean differences between positive versus negative outcome on the Technical Competency subscales. Positive outcome students had a statistically significant higher *Internet Competency* than negative outcome students. No difference was found for *Computer Competency*. Table 13 shows the mean differences between the pass and fail students

on the Technical Competency subscales. Passing students had a statistically significant higher *Internet* and *Computer* average competency subscale scores than failing students.

Table 12. Positive versus Negative on Technical Competency subscales

Technical Competency	Outcomes	N	Mean	Mean Difference	Standard Error	t	p
Computer	Positive	367	46.68	.51	.38	1.34	.18
	Negative	676	46.17				
Internet	Positive	367	47.47	1.60	.42	3.81	.0001
	Negative	676	45.87				

Table 13. Pass versus Fail on Technical Competency subscales

Technical Competency	Outcomes	N	Mean	Mean Difference	Standard Error	t	p
Computer	Pass	534	46.50	1.60	.49	3.27	.001
	Fail	204	44.90				
Internet	Pass	534	46.48	1.92	.55	3.49	.001
	Fail	204	44.56				

Table 14 indicates mean differences between positive versus negative outcome on the Technical Knowledge subscales. Positive outcome students had a statistically significant higher *Technology Usage* and *Technical Vocabulary* than negative outcome students. No statistical difference was found for *Technology in Your Life* and *Personal Computer/Internet* at the $p < .05$ level of significance. Table 15 shows the mean differences between the pass and fail students on the Technical Knowledge subscales. Passing students had a statistically significant higher *Technical Vocabulary* average subscale score than failing students with no statistical difference on the other subscales.

Table 14. Positive versus Negative on Technical Knowledge subscales

Technical Knowledge	Outcomes	N	Mean	Mean Difference	Standard Error	t	p
Technology Usage	Positive	365	13.62	.52	.22	2.36	.02
	Negative	663	13.10				
Technology in Your Life	Positive	365	12.76	.36	.22	1.64	.10
	Negative	663	12.40				
Technology Vocabulary	Positive	365	8.28	.44	.10	4.40	.0001
	Negative	663	7.84				
Personal Computer/ Internet	Positive	365	12.13	-.04	.08	-.50	.65
	Negative	663	12.17				

Table 15. Pass versus Fail on Technical Knowledge subscales

Technical Knowledge	Outcomes	N	Mean	Mean Difference	Standard Error	t	p
Technology Usage	Pass	529	13.07	.46	.29	1.58	.12
	Fail	197	12.61				
Technology in Your Life	Pass	529	12.35	.39	.29	1.34	.18
	Fail	197	11.96				
Technology Vocabulary	Pass	529	7.98	.39	.12	3.25	.002
	Fail	197	7.59				
Personal Computer Internet	Pass	529	12.22	.08	.10	.80	.38
	Fail	197	12.14				

Summary

Table 16 indicates the student attributes which characterized positive outcomes (active, graduated) and passing courses (A,B,C) in each Readiness Domain with their respective subscales. *Place, Reason, and Skills* were key indicators of success with regards to Life Factors. *Logical* was indicated for Learning Styles. *Academic, Help Seeking, Procrastination, Time Management, and Locus of Control* were indicated for Personal Attributes. *Internet Competency* and/or *Computer Competency* were important for Technical Competency, while *Technology Usage* and *Technical Vocabulary* were important in Technical Knowledge. Overall, we see a distinctive trend where successful students (positive outcomes, passing) had certain

characteristics above those of unsuccessful students (negative outcomes, failing). Students with attributes related to *Place, Reason, Skills, Logical, Academic, Help Seeking, Procrastination, Time Management, Locus of Control, Internet Competency, Technology Usage* and *Technical Vocabulary* performed better in an online course delivery system.

Table 16. Summary of Readiness Domain subscales relations to Positive Outcomes and Passing.

<u>Readiness Domain</u>	<u>Readiness Domain Subscales</u>	
	<u>Positive vs. Negative</u>	<u>Pass vs. Fail</u>
Life Factor	<i>Place, Reason, and Skills</i>	<i>Place</i>
Learning Styles	<i>Social^a and Logical</i>	N/A
Personal Attributes	<i>Academic, Help Seeking, Procrastination, Time Management, and Locus of Control</i>	<i>Time Management</i>
Technical Competency	<i>Internet Competency</i>	<i>Internet Competency and Computer Competency</i>
Technical Knowledge	<i>Technology Usage and Technical Vocabulary</i>	<i>Technical Vocabulary</i>

^a Social was higher for negative outcome students

Predictive Models

Each set of subscales for the Readiness Domains were considered a theoretical set of independent predictor variables, therefore separate regression analyses were conducted on each. In addition, each set of subscales had a different sample size due to missing responses, further justifying separate predictor sets. The series of predictive models for the sets of subscales (independent variables) were computed with *GPA* and *Credit Hours Earned* as the dependent variables.

GPA Predictive Models

GPA was predicted using each set of Readiness Domain subscales separately. The multiple regression results are output below for each of these analyses. The overall summary of findings is provided in a Summary section. Results in the Summary section report the F-test results using only the subscales that initially indicated they were statistically significant predictors from the full set of predictor variables.

Table 17. GPA predicted by Life Factor subscales

Life Factors	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.349	.681		-.512	.609
Time	-.004	.021	-.009	-.173	.863
Place	.127	.039	.179	3.253	.001
Reason	4.382E-5	.037	.000	.001	.999
Resources	-.008	.022	-.019	-.347	.728
Skills	.057	.028	.111	2.041	.042

Table 18. GPA predicted by Learning Styles subscales

Learning Styles	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.739	.238		11.509	.000
Visual	.019	.020	.032	.959	.338
Social	-.035	.026	-.049	-1.346	.178
Physical	-.035	.023	-.054	-1.546	.122
Aural	-.029	.022	-.042	-1.296	.195
Verbal	-.039	.023	-.062	-1.680	.093
Solitary	.006	.024	.008	.236	.814
Logical	.057	.024	.085	2.387	.017

Table 19. GPA predicted by Personal Attribute subscales

Personal Attribute	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.728	.499		-1.460	.144
Academic Attributes	-.024	.024	-.031	-1.006	.315
Help Seeking	.063	.026	.080	2.424	.016
Persistence	-.010	.024	-.013	-.430	.667
Procrastination	.023	.020	.040	1.118	.264
Time Management	.106	.028	.125	3.716	.0001
Locus Of Control	.092	.023	.117	3.959	.0001

Table 20. GPA predicted by Technology Competency subscales

Technology Competency	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.068	.374		.182	.855
Computer Competency	.014	.007	.063	2.011	.045
Internet Competency	.036	.006	.178	5.669	.0001

Table 21. GPA predicted by Technical Knowledge subscales

Technical Knowledge	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.892	.447		1.993	.046
Technology Usage	.016	.014	.041	1.140	.254
Technology in your Life	.000	.013	-.001	-.030	.976
Technology Vocabulary	.149	.028	.175	5.390	.0001
Personal Computer/Internet	.008	.033	.008	.248	.805

Table 22 shows that GPA was significantly predicted by *Place, Skills, Verbal, Logical, Help Seeking, Time Management, Locus of Control, Computer Competency, Internet Competency, and Technology Vocabulary*. The *Verbal* subscale was added to establish statistically significant prediction of GPA with the *Logical* subscale due to a variable suppressor effect. Similar Readiness Domain subscales as those noted in the Mean Difference section were indicated as student characteristics that significantly predicted GPA.

Table 22. Summary of Readiness Domain subscales relation to GPA

Readiness Domains	GPA	F	p
Life Factor	<i>Place and Skills</i>	12.35	.0001
Learning Styles	<i>Verbal^a and Logical</i>	3.95	.02
Personal Attributes	<i>Help Seeking, Time Management, and Locus of Control</i>	21.11	.0001
Technical Competency	<i>Computer and Internet Competency</i>	22.75	.0001
Technical Knowledge	<i>Technology Vocabulary</i>	38.76	.0001

a Verbal was added otherwise Logical was not significant due to suppressor variable.

Credit Hrs Earned

Table 23 indicates that *Place* for Life Factors was the only subscale that significantly predicted Credit Hours Earned. *Visual* subscale in Learning Styles was the only significant predictor (Table 24). Table 25 indicated that Personal Attribute subscales, *Academic Attributes, Help Seeking, and Locus of Control* were significant predictors of Credit Hours Earned. Table 26 shows that both Technical Competency subscales, *Computer Competency and Internet Competency*, were significant subscales predicting Credit Hours Earned. Table 27 indicated that

only *Technology Usage* and *Technology Vocabulary* were significant predictors in the Technical Knowledge domain. The Summary section contains the overall findings with associated F-tests.

Table 23. Credit Hours Earned predicted by Life Factor subscales

Life Factors	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.333	14.100		-.095	.925
Time	-.229	.421	-.028	-.545	.586
Place	2.099	.790	.149	2.659	.008
Reason	-.978	.760	-.069	-1.288	.199
Resources	.614	.448	.077	1.370	.171
Skills	.752	.565	.074	1.333	.183

Table 24. Credit Hours Earned predicted by Learning Styles subscales

Learning Styles	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	35.305	7.121		4.958	.000
Visual	1.768	.594	.101	2.977	.003
Social	-.161	.776	-.008	-.207	.836
Physical	-1.005	.669	-.054	-1.502	.133
Aural	-.603	.660	-.030	-.914	.361
Verbal	-.815	.677	-.045	-1.203	.229
Solitary	1.251	.717	.057	1.746	.081
Logical	.416	.705	.021	.590	.555

Table 25. Credit Hours Earned predicted by Personal Attribute subscales

Personal Attribute	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-48.238	14.821		-3.255	.001
Academic Attributes	1.956	.712	.087	2.746	.006
Help Seeking	2.068	.772	.091	2.678	.008
Persistence	.155	.715	.007	.217	.828
Procrastination	-.270	.602	-.016	-.448	.654
Time Management	1.539	.854	.062	1.801	.072
Locus Of Control	1.602	.686	.071	2.335	.020

Table 26. Credit Hours Earned predicted by Technical Competency subscales

Technical Competency	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-11.731	11.303		-1.038	.300
Computer Competency	.403	.207	.062	1.945	.052
Internet Competency	.738	.190	.124	3.884	.0001

Table 27. Credit Hours Earned predicted by Technical Knowledge subscales

Technical Knowledge	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	12.014	13.100		.917	.359
Technology Usage	1.242	.405	.112	3.069	.002
Technology in your Life	-.131	.391	-.012	-.334	.739
Technology Vocabulary	4.289	.817	.172	5.250	.0001
Personal Computer/Internet	-1.631	.979	-.052	-1.667	.096

Summary

Table 28 summarizes the comparison of which subscales for each Readiness Domain were statistically significant predictors of Credit Hours Earned. Many of these subscales also predicted GPA with the exception of *Visual* and *Academic Attributes*. Findings overall indicated that student characteristics related to *Place*, *Visual*, *Academic Attributes*, *Help Seeking*, *Locus of Control*, *Computer Competency*, *Internet Competency*, *Technology Usage* and *Technology Vocabulary* were related to the number of Credit Hours Earned.

Table 28. Summary of Readiness Domain subscales relation to Credit Hours Earned

Readiness Domains	Credit Hours Earned	F	p
Life Factor	<i>Place</i>	12.37	.0001
Learning Styles	<i>Visual</i>	6.81	.01
Personal Attributes	<i>Academic Attributes</i> , <i>Help Seeking</i> , and <i>Locus of Control</i>	13.40	.0001
Technical Competency	<i>Computer Competency</i> and <i>Internet Competency</i>	12.23	.0001
Technical Knowledge	<i>Technology Usage</i> and <i>Technology Vocabulary</i>	26.97	.0001

CONCLUSIONS

A clear distinction was made between successful and unsuccessful students by using Sample University variables to create two types of contrasted groups. Those students who were active or graduated (positive) versus students who withdrew, were dismissed, or transferred (negative) formed one group comparison. The second contrasted group was students who passed

(A, B, C) versus students who failed (D, F, W, WR, PR). Statistically significant mean differences on certain Readiness Domain subscales were found between these two contrasted groups. The statistically significant mean differences on the subscales indicated which student characteristics were important.

A second analysis involving prediction models with GPA and Credit Hours Earned also indicated that certain Readiness Domain subscales were important in predicting students GPA and Credit Hours Earned. Knowing a student's subscale score on *Place, Skills, Logical, Help Seeking, Time Management, Locus of Control, Computer Competency, Internet Competency, and Technology Vocabulary* would allow inference to their GPA. Knowing a student's subscale score on *Place, Visual, Academic Attributes, Help Seeking, Locus of Control, Computer Competency, Internet Competency, Technology Usage, and Technology Vocabulary* would allow inference to their Credit Hours Earned. Overall, certain Readiness Domain subscales were important indicators of student success, whether positive outcomes, passing, higher GPA, or more credit hours earned.

APPENDIX

Independent t-test of mean differences on the Readiness Domain dependent variables are included to compare overall the positive versus negative outcome [positive (active/graduated); negative (withdrew/dismissed/transfer)] and the pass versus fail status. Table A results indicated that those students who were active or graduated had higher mean percentages on *Life Factors*, *Personal Attributes*, *Reading*, *Technical Knowledge*, and *Technical Competency* than students who withdrew, were dismissed or transferred. *Learning Styles* and *Typing Accuracy* were not statistically different. Table B shows the independent t-test results for pass versus fail on the Readiness Domain dependent variables. *Life Factors* and *Learning Styles* were **not** statistically different between students who passed (A,B,C) and those who failed (D, F, W,WF,PR). *Personal Attributes*, *Reading*, *Typing Accuracy*, *Technical Knowledge*, and *Technical Competency* however were statistically different with passing students scoring higher on average than failing students.

Table A. Positive vs. Negative mean percent difference

<u>READINESS DOMAINS</u>	<u>Outcomes</u>	<u>N</u>	<u>Mean %</u>	<u>Mean Difference</u>	<u>Standard Error</u>	<u>t</u>	<u>p</u>
Life Factors	Positive	205	80.73	2.64	.83	3.18	.002
	Negative	245	78.09				
Learning Styles	Positive	381	69.36	-.35	.78	-.45	.65
	Negative	731	69.71				
Personal Attributes	Positive	385	79.58	2.08	.42	4.95	.0001
	Negative	746	77.50				
Reading	Positive	369	74.79	4.38	1.13	3.88	.0001
	Negative	687	70.41				
Typing Accuracy	Positive	364	92.35	1.39	1.22	1.14	.25
	Negative	663	90.96				
Technical Knowledge	Positive	363	73.06	1.94	.68	2.85	.004
	Negative	663	71.12				
Technical Competency	Positive	365	94.47	1.81	.62	2.92	.004
	Negative	676	92.66				

Table B. Pass vs. Fail mean percent difference

<u>READINESS DOMAINS</u>	<u>Outcomes</u>	<u>N</u>	<u>Mean %</u>	<u>Mean Difference</u>	<u>Standard Error</u>	<u>t</u>	<u>p</u>
Life Factors	Pass	231	78.99	1.63	1.15	1.42	.16
	Fail	88	77.36				
Learning Styles	Pass	562	69.10	-.77	.98	-.78	.44
	Fail	225	69.87				
Personal Attributes	Pass	569	78.34	1.11	.53	2.09	.03
	Fail	230	77.23				
Reading	Pass	541	71.96	3.31	1.45	2.28	.02
	Fail	208	68.65				
Typing Accuracy	Pass	531	92.99	4.93	1.48	3.33	.001
	Fail	196	88.06				
Technical Knowledge	Pass	529	71.28	2.07	.88	2.35	.02
	Fail	197	69.21				
Technical Competency	Pass	534	93.50	3.52	.82	4.29	.0001
	Fail	204	89.98				