




2-27-2018

IMLS Sparks Ignite IL Framework Cooperative Project Final Performance Report

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Ferguson, Jessame, "IMLS Sparks Ignite IL Framework Cooperative Project Final Performance Report" (2018). *IMLS SPARKS Ignite IL Framework Cooperative Project for At-Risk Student Success in Smaller Colleges*. 7.
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FINAL PERFORMANCE REPORT

Please consult attached instructions when filling out this form.

1. Federal agency and organization element to which report is submitted: <p style="text-align: center;">Institute of Museum and Library Services</p>	2. Federal award or other identifying number assigned by federal agency: <p style="text-align: center;">SP-02-16-0022-16</p>	Page 1	of Pages 8
		3a. DUNS number: 74935248	
		3b. EIN/TIN: 52-0591694	
4. Recipient organization (name and complete address, including ZIP+4/postal code): McDaniel College, 2 College Hill, Westminster MD 21157		5. Recipient identifying or account number:	
6a. Award period of performance start date (mo/day/yr): 12/01/2016	6b. Award period of performance end date (mo/day/yr): 11/30/2017	7. Reporting period end date (mo/day/yr): 11/30/2017	
8. Project URLs, if any: digitalcommons.ursinus.edu/IMLS_ILFramework * * Activation pending at the time of this report submission.		9. Report frequency: <input checked="" type="checkbox"/> annual <input type="checkbox"/> semi-annual <input type="checkbox"/> quarterly <input type="checkbox"/> other If other, describe:	
10. Other attachments? Yes No Contact the IMLS program office to receive instructions for transmitting additional attachments.			
11a. Name and title of Project Director: Jessame Ferguson Director, Hoover Library		11b. Telephone (area code, number, extension): (410) 857-2281	
		11c. Email address: jferguson@mcdaniel.edu	
12. Certification: By submitting this report I certify to the best of my knowledge and belief that this information is correct and complete for performance of activities for the purposes set forth in the award documents.			
13a. Signature of Authorized Certifying Official: 		13b. Date report submitted (mo/day/yr): 2/27/2018	
13c. Name and title of Authorized Certifying Official: Robin Dewey Director, Office of Institutional Research and Sponsored Programs		13d. Telephone (area code, number, extension): (410) 386-4699	
		13e. Email address: rdewey@mcdaniel.edu	
		14. Agency use only	

15. **Recipient Organization:** McDaniel College

16. **Project Title:** SPARKS Ignite IL Framework Cooperative Project for At-Risk Student Success in Smaller Colleges

17. **Project Summary:** Through a partnership of five institutions led by McDaniel College, we developed new best practices for ensuring information literacy education programs at smaller institutions support success and persistence of at-risk students in their critical first-year. We used the newly adopted Association of College & Research Libraries *Framework for Information Literacy for Higher Education* to develop and test new assessment methodologies and engaging educational experiences for first-year students. The project will take place in 2017. The below report summarizes our successes, challenges and results. We will also share and publicize what we learned and the products we developed through presentations and our publicly available toolkit of resources.

18. **Activities**

Activities Proposed in Your Application	Activities Completed during the Award Period of Performance	Explanation of Any Variance
Begin project; conduct first group training and planning meeting – first half of January	We had a conference call on January 6 to plan for our in-person workshop. January 30-31 – Workshop with Lisa Hinchliffe on developing <i>Framework</i> focused instruction	Project participants decided it would be a more effective use of time and financial resources to do a two-day workshop instead of splitting up the dates so it would require less travel.
Conduct second group training and planning meeting – second half of January	See above	
Project lead visits each institution during the spring term to address any questions and ensure that each college develops the necessary groundwork for the project’s success	Site visits were completed with 3 out of 4 institutions.	Scheduling didn’t work out for the 4 th institution but they worked well on the project without needing a site visit.
Conduct third group meeting to share progress and refine plans	Ongoing conference call meetings with participants were arranged throughout the duration of the project.	See below
Conduct fourth group meeting to finalize details of assessment and instruction methods before the start of fall semester	May 1-2 - Workshop with April Cunningham on developing <i>Framework</i> focused assessment test questions	Project participants decided it would be a more effective use of time and financial resources to do a two-day workshop instead of splitting up the dates so it would require less travel.
Monthly milestones due for the baseline assessment project team: Share progress and discuss details at April group meeting Complete test-ready version of baseline assessment Conduct baseline assessment	New timeline was developed based on the conversations at the May workshop, see Appendix E for details on the revised timeline All details completed	

<p>norming and beta-testing process and analyze the results; share progress and discuss details at July group meeting</p> <p>Revise and finalize baseline assessment and share by mid-August</p> <p>Analysis of results compared to demographic data; share findings</p>		
All institutions conduct baseline assessment of incoming FY students	Completed	
<p>Monthly milestones due for the learning activities team:</p> <p>Share progress and discuss details at April group meeting</p> <p>Complete draft learning modules covering each of the three Framework areas outlined in RQ2A-C; share progress and discuss details at July group meeting</p> <p>Revise and finalize learning activity details and share by mid-August</p>	All details completed, see Appendix E for revised timeline	Specific <i>Framework</i> focused outcomes and performance indicators were developed that covered more details than outlined originally in RQ2A-C, See Appendix F
<p>Monthly milestones due for the post-test assessment team:</p> <p>Discuss post-test methodology based on design of baseline assessment and learning activity plans at July group meeting</p> <p>Deliver draft for feedback, conduct beta-testing if needed, gather and review feedback</p> <p>Revise and finalize post-test assessment methodology and share by end of October</p> <p>Analysis of results compared to baseline assessment scores and demographic data; share findings</p>	<p>All details completed, see Appendix E for revised timeline</p> <p>To maintain validity of the t-test analysis we did not change the questions on the post-test based on results of the pre-test. The same questions were used on both tests.</p>	
All institutions conduct post-test assessment of FY students	Completed	
<p>Monthly milestones due for the focus group planning team:</p> <p>Discuss focus group questions and</p>	All details completed, see Appendix E for revised timeline	

<p>methodology plans at July group meeting</p> <p>Deliver draft questions and methodology; gather and review feedback</p> <p>Revise and finalize focus group questions and methodology and share by end of October</p> <p>Analysis of focus group results; share findings</p>		
All institutions conduct focus group with FY students	4 out of 5 institutions completed focus groups	One institution had difficulty attaining participants.

19. Changes

Type of Change	Description	Date of Approval (if applicable)
key personnel	Change in library director at Washington & Jefferson College – Ronalee Ciocco served throughout the duration of the project.	
key personnel	Change in library director at Goucher College – Nancy Magnuson retired and Pamela Flinton took over management responsibilities for the project at Goucher.	
key personnel	Librarians at participant institutions (not previously mentioned in the proposal) who worked on the project and were integral to the success were: Jessica M. Barbera, Kerry Gibson, Jim Huff, Christine Iannicelli, Samantha S. Martin, and Marianne L. Sade	
project budget allocations	Bring in one of our consultants for more work with the participants related to constructing quality active learning using the Framework; and using savings from other parts of the budget to fund consultant work for analysis.	5/30/2017 via email
key personnel (including consultants and contractors)	The following consultants were employed during the course of this project which helped ensure our success: Lisa Hinchliffe, April Cunningham, Brian Ault, and Joel Wright	

20. Results

a. Agency-Level Goals and Performance Goals

Learning

- Train and develop museum and library professionals
- Support communities of practice
- Develop and provide inclusive and accessible learning opportunities

Community

- Strengthen museums and libraries as essential partners in addressing the needs of their communities

Content and Collections

- Broaden access and expand use of the Nation’s content and collections
- Improve management of the Nation’s content and collections
- Improve preservation, conservation, and care of the Nation’s content and collections

For **Learning** and **Community** projects

Performance Measure Statement	Survey Respondent	No. of Participants	No. Total Responses	No. Responses Per Answer Option				No. Non Responses
				Strongly Disagree	Disagree	Agree	Strongly Agree	
We used a test, not a survey. See Appendix A, B and C for results. And below for specific answers to our Research Questions.								

For **Content and Collections** projects, proceed directly to Question 20b.

b. Program and Project-Level Results

Intended Result(s)	Actual Result(s)	Explanation of Any Variance
RQ1: Which demographic factors indicate correlation to lower information literacy test scores of incoming students and how do these vary by institution?	There is variation by institution, see Appendix C for the full results for the demographics that were gathered from each institution and the scores by outcome on the pre-test. Of course, the WHY is a much different matter. Institutions didn’t directly sample on these demographics, each institution selected which classes they worked with on this project, and that varied significantly. Therefore, each institution will need to determine how relevant the individual findings are to their own context.	There is a significant spread of scores when you compare pre-test results by institution, however the samples for some institutions may not be representational. For example, scores were lowest for non-white students at the institution with the highest number (N=44) of participants in that demographic; whereas the institution with the highest scores for non-white students has the fewest participants (N=3) in that demographic. This indicates that further study may be necessary at institutions with low participants in a given demographic area.
RQ2: To what degree does Framework focused information literacy instruction make a significant positive impact on bridging a student’s college readiness gap?	Attitudes of students, including those potentially at-risk, are positively impacted by information literacy instruction. See Appendix D for the full focus group report for more details. Evidence demonstrates that students recognize the need to increase their abilities for college-level work, that those skills are	

	different from the ones they employed in high school, and they are able to recall specific abilities they now employ in their research practices to be more successful.	
RQ3: To what degree does information literacy instruction affect a student's attitudes towards research and how it supports their success in college?	Both the test results and the focus group results demonstrate that students are more confident in their skills after the instruction. On the pre-test student confidence scores averaged 13.8; whereas on the post-test the average score was 16.3 for an increase of 18% confidence in their ability to answer information literacy questions. All institutions demonstrated an increase in confidence on the post-test results. See Appendix B column SC4_t2. For focus group results see Appendix D, Topic 2 section on confidence.	
RQ4: How effective was our new Framework focused model for information literacy instruction at increasing the abilities of students within demographics that needed the most development?	See Appendix A for full results. White students do statistically significantly better on pre-test Outcome 3 and Overall; and on post-test Outcome 3. Post-test scores for non-white students on Outcome 4 are better than white students and it is approaching significance. Non-white students improved their results statistically significantly in all areas. This group has shown significant improvement as a result of the instruction. First Generation (FG) students do statistically significantly worse on Outcome 1 on the pre-test, however, the gap is not stat. sig. for Outcome 1 on the post-test. Meaning the gap has decreased which is good news. Post-test for Outcome 2 shows that FG did slightly better than non-FG and this result is approaching significance, this is also true of the Overall results. Meaning that after instruction the post-test shows there is no significant difference in scores for FG vs. non-FG, but that FG do slightly better than non-FG. Pell eligible students do statistically significantly better than non-pell on the post-test for Outcome 2. Otherwise there is no statistical significance in scores for students who are pell eligible vs. non-pell. There were no statistically significant differences in Male and Female scores or confidence. For Outcome 3 the difference in post-test scores for Females (higher) vs. Males (lower) is approaching significance.	
RQ5: How effective were the assessment instruments and methods used at measuring our intended outcomes?	Largely effective. The focus group method worked well, the test instrument also worked well, though there are some test questions that may need some further fine-tuning. In our development of the Outcomes and the Indicators we recognized that students might struggle the most with test items in Outcome 3. We see evidence of this as well as some improvement as a result of the instruction, but more work should be done to explore the dissonance between the abilities students need in this area and what they are able to demonstrate. Possibly a different method than a test is needed for certain aspects. In Appendix C, toward the bottom, we checked to see if high school GPA (HSGPA) was correlated with any of the aggregate measures. We found that HSGPA is significantly correlated with the 3 most important outcomes on the pre-test (though the correlations are weak to moderate). This is a positive result because one could hypothesize that those who had higher GPAs would do better on the test; and it is a validity check of the quality of the instrument. This connection is not really there to speak of at T2 (post-test), which is expected, because you have the intervening variable of the instruction they received in their classes in college.	The test questions met our needs for this study but we may recommend some refinement for future use. We plan to share the instrument broadly to gather ideas for how to improve the questions or how to assess some abilities with a different method.

21. Lessons Learned

Everyone involved at each institution learned a great deal about the importance of this type of work and the importance of continuing it. Each acquired new skills related to *Framework* focused information literacy instruction and assessment as a result of participating in the project. The Project Director would like to express gratitude to IMLS for supporting the project, we would not have accomplished the project on this scale this quickly without the funding. However, it is a great deal of work to accomplish such a project on the one-year timeframe as required by this grant opportunity. We put in many extra hours to make it happen and we determined some very important results for our own institutions as well as the professional community at large. It is incredibly important that IMLS continues to fund projects like this one. However, having done it, I doubt we'd do it on the same timeframe and without more funding in future. We were very lucky to find consultants willing to work with us for such reasonable costs. Compensation should be offered for the amount of time project participants need to work on this research in addition to their normal workloads. Compensation for faculty participants may have improved the sample size at some institutions, but this was cut from the proposal due to the \$25,000 limit for this grant opportunity. A longer timeframe that works better with the academic year is also necessary. Preparing the details in time for the start of the fall semester and then needing time to complete the analysis following the end of the fall semester in time for the reporting deadline was challenging.

22. Next Steps

A. We have the raw results from SPSS for question to question analysis but it will take a good bit of work to see if the % changes per each question are statistically significant. This will take longer than the time of this study will allow, but we will continue to work on it after this reporting deadline and discuss the results with each other and the professional community as opportunities arise.

B. Participating institutions have plans to share results with the faculty and administrators at their institutions and discuss how information literacy instruction does make a difference and positively impacts the success of students.

C. The toolkit of resources is available at: digitalcommons.ursinus.edu/IMLS_ILFramework (please note this website is pending activation at the time of this final report submission. This site contains the files submitted for this report along with the full script and resources used for instruction, the test instrument, and the focus group protocols. We will continue to share our results with the professional community and solicit their involvement in increasing participation in the project, as well as sharing how they have adapted it. We may develop a different, more interactive location for those activities, and leave the Ursinus College repository as the static record of the original research.

D. So far we have achieved opportunities to present on the project at the LOEX 2018 conference (<http://www.loexconference.org/>) and also at the MILEX June 2018 meeting (<http://www.milexmd.org/>) and we will continue to pursue opportunities to present or publish on the project.

E. We plan to also look more closely at individual student results and determine if we can link lower performing students to the high schools they came from prior to entering college. If so, we will have conversations with those high schools in order to assist the school media librarians in their efforts to teach students important skills before they enter college. Or advocate for the importance of school media librarians in high schools that don't currently have any.

23. Appendices

Appendix A – IMLS Scale Comparisons By Demographics

Appendix B – IMLS Aggregate Scores By Institution T1 and T2

Appendix C – IMLS Aggregate Scores By Institution By Demo

Appendix D – Focus Group Report

Appendix E – Revised Timeline

Appendix F – Outcomes and Indicators for Student Performance

Burden Estimate and Request for Public Comments: Public reporting burden for this collection of information is estimated to average 12.22 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comment regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Institute of Museum and Library Services, Chief Information Officer, 1800 M Street, NW, 9th Floor, Washington, DC 20036-5802, and to the Office of Management and Budget, Paperwork Reduction Project 3137-0029, Washington, DC 20503.

OVERALL

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	SC0	5.72	159	1.916	.152
	SC0_t2	6.19	159	2.085	.165
Pair 2	SC1	3.68	159	1.057	.084
	SC1_t2	3.95	159	1.135	.090
Pair 3	SC2	5.74	159	1.740	.138
	SC2_t2	5.92	159	1.512	.120
Pair 4	SC3	.75	159	.536	.043
	SC3_t2	1.13	159	.548	.043
Pair 5	SC4	13.82	159	3.584	.284
	SC4_t2	16.30	159	2.859	.227
Pair 6	SC5	15.77	159	3.479	.276
	SC5_t2	16.96	159	3.689	.293



SC0 = Outcome 1
 SC1 = Outcome 2
 SC2 = Outcome 3
 SC3 = Outcome 4
 SC4 = Confidence
 SC5 = Overall score

Results - Statistically significant increases in scores for Outcome 1, 2, and 4, and Overall. Confidence increased statistically significantly. Slight increase in scores for Outcome 3, not stat. sig.

DEMOGRAPHICS

Group Statistics - Female/Male

Gender		N	Mean	Std. Deviation	Std. Error Mean
SC0	F	92	5.77	1.905	.199
	M	92	5.55	1.935	.202
SC1	F	92	3.63	1.076	.112
	M	92	3.60	1.139	.119
SC2	F	92	5.88	1.753	.183
	M	92	5.59	1.876	.196
SC3	F	92	.79	.525	.055
	M	92	.72	.541	.056
SC4	F	92	13.73	3.410	.356
	M	92	13.96	3.718	.388
SC5	F	92	15.97	3.538	.369
	M	92	15.35	3.645	.380
SC0_t2	F	78	6.37	1.955	.221
	M	81	6.02	2.202	.245
SC1_t2	F	78	3.86	1.136	.129
	M	81	4.04	1.134	.126
SC2_t2	F	78	6.13	1.361	.154
	M	81	5.73	1.628	.181
SC3_t2	F	78	1.17	.568	.064
	M	81	1.09	.529	.059
SC4_t2	F	78	16.17	3.017	.342
	M	81	16.43	2.711	.301
SC5_t2	F	78	17.23	3.441	.390
	M	81	16.69	3.917	.435

F=Female
 M=Male

Results - No statistically significant differences in Male and Female scores or confidence. For Outcome 3 the difference in post-test scores for Females (higher) vs. Males (lower) is approaching significance.

Group Statistics - First Generation/Not

First Generation		N	Mean	Std. Deviation	Std. Error Mean
SC0	F	60	5.23	2.012	.260
	N	124	5.87	1.843	.166
SC1	F	60	3.68	1.066	.138
	N	124	3.58	1.127	.101
SC2	F	60	5.50	1.610	.208
	N	124	5.85	1.904	.171
SC3	F	60	.80	.514	.066
	N	124	.73	.543	.049
SC4	F	60	13.63	3.840	.496
	N	124	13.94	3.427	.308
SC5	F	60	15.10	3.606	.466
	N	124	15.93	3.573	.321
SC0_t2	F	53	6.47	1.887	.259
	N	106	6.06	2.173	.211
SC1_t2	F	53	4.17	.893	.123
	N	106	3.84	1.228	.119
SC2_t2	F	53	6.08	1.398	.192
	N	106	5.85	1.566	.152
SC3_t2	F	53	1.15	.533	.073
	N	106	1.11	.558	.054
SC4_t2	F	53	16.40	3.078	.423
	N	106	16.25	2.757	.268
SC5_t2	F	53	17.64	3.120	.429
	N	106	16.61	3.912	.380

F=First Generation
N=Not First Generation

Results - Outcome 1 pre-test First Gen students do statistically significantly worse, however, the gap is not stat. sig. for Outcome 1 on the post-test (meaning the gap has decreased which is good news).

Post-test for Outcome 2 shows that First Gen did slightly better than non-FG and this result is approaching significance, this is also true of the Overall results.

Meaning that after instruction the post-test shows there is no significant difference in scores for FG vs. non-FG, but that FG do slightly better than non-FG.

Group Statistics - Pell Eligibility

Pell Flag		N	Mean	Std. Deviation	Std. Error Mean
SC0	Y	59	5.51	2.046	.266
	N	125	5.74	1.858	.166
SC1	Y	59	3.78	.984	.128
	N	125	3.54	1.154	.103
SC2	Y	59	5.63	1.828	.238
	N	125	5.78	1.817	.162
SC3	Y	59	.78	.559	.073
	N	125	.74	.522	.047
SC4	Y	59	13.76	3.583	.466
	N	125	13.88	3.562	.319
SC5	Y	59	15.56	3.879	.505
	N	125	15.70	3.469	.310
SC0_t2	Y	54	6.33	2.009	.273
	N	105	6.12	2.129	.208
SC1_t2	Y	54	4.20	.855	.116
	N	105	3.82	1.239	.121
SC2_t2	Y	54	5.98	1.473	.200
	N	105	5.90	1.538	.150
SC3_t2	Y	54	1.19	.479	.065
	N	105	1.10	.581	.057
SC4_t2	Y	54	16.30	3.166	.431
	N	105	16.30	2.704	.264
SC5_t2	Y	54	17.46	3.266	.444
	N	105	16.70	3.878	.378

Y=YES
N=No

Results - Pell Eligible students do statistically significantly better than non-pell on the post-test for Outcome 2

Group Statistics - Race

RaceDichotomy		N	Mean	Std. Deviation	Std. Error Mean
SC0	White	116	5.84	1.851	.172
	Non-White	65	5.34	2.041	.253
SC1	White	116	3.53	1.153	.107
	Non-White	65	3.77	1.027	.127
SC2	White	116	6.05	1.744	.162
	Non-White	65	5.14	1.828	.227
SC3	White	116	.72	.537	.050
	Non-White	65	.80	.536	.067
SC4	White	116	14.15	3.391	.315
	Non-White	65	13.34	3.838	.476
SC5	White	116	16.06	3.424	.318
	Non-White	65	14.88	3.855	.478
SC0_t2	White	95	6.43	1.933	.198
	Non-White	61	5.89	2.259	.289
SC1_t2	White	95	3.87	1.257	.129
	Non-White	61	4.05	.921	.118
SC2_t2	White	95	6.15	1.444	.148
	Non-White	61	5.59	1.532	.196
SC3_t2	White	95	1.06	.522	.054
	Non-White	61	1.21	.581	.074
SC4_t2	White	95	16.62	2.424	.249
	Non-White	61	15.79	3.436	.440
SC5_t2	White	95	17.33	3.601	.369
	Non-White	61	16.43	3.708	.475

Results - White students do statistically significantly better on pre-test Outcome 3 and Overall; and on post-test Outcome 3.
(Need for further instruction)

Approaching significance are higher scores for white students for pre-test Outcome 1; post-test Outcome 1 and post-test confidence.

Interesting that post-test scores for non-white on Outcome 4 are better and approaching significance.

Paired Samples Statistics - Time to Complete

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Duration (in seconds)	972.50	149	476.795	39.061
	T2-Duration (in seconds)	636.61	149	239.604	19.629

Results - Students took statistically significantly less time to complete the post-test than the pre-test - by 5.6 minutes (no

Non-Whites Only - Paired Samples Statistics - Time to Complete

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Duration (in seconds)	990.72	54	236.652	32.204
	T2-Duration (in seconds)	716.74	54	234.146	31.863
Pair 2	SC0	5.33	61	2.063	.264
	SC0_t2	5.89	61	2.259	.289
Pair 3	SC1	3.77	61	1.055	.135
	SC1_t2	4.05	61	.921	.118
Pair 4	SC2	4.98	61	1.775	.227
	SC2_t2	5.59	61	1.532	.196
Pair 5	SC3	.80	61	.542	.069
	SC3_t2	1.21	61	.581	.074
Pair 6	SC4	13.28	61	3.908	.500
	SC4_t2	15.79	61	3.436	.440
Pair 7	SC5	14.70	61	3.909	.500
	SC5_t2	16.43	61	3.708	.475

Results - Non-white students took more time to complete both the pre and post-test than the total sample; 1 minute more (4.6 minutes difference) to complete the post-test.

Non-white students improved their results statistically significantly in all areas.

High School GPA Correlations - Pre-Test

		HS GPA	SC0	SC1	SC2	SC3	SC4	SC5
HS GPA	Pearson Correlation	1	.301**	.172*	.173*	.035	.054	.310**
	Sig. (2-tailed)		.000	.023	.022	.648	.474	.000
	N	175	175	175	175	175	175	175
SC0	Pearson Correlation	.301**	1	.258**	.269**	-.006	.231**	.749**
	Sig. (2-tailed)	.000		.000	.000	.933	.002	.000
	N	175	184	184	184	184	184	184
SC1	Pearson Correlation	.172*	.258**	1	.319**	.126	.373**	.621**
	Sig. (2-tailed)	.023	.000		.000	.087	.000	.000
	N	175	184	184	184	184	184	184
SC2	Pearson Correlation	.173*	.269**	.319**	1	.006	.309**	.757**
	Sig. (2-tailed)	.022	.000	.000		.938	.000	.000
	N	175	184	184	184	184	184	184
SC3	Pearson Correlation	.035	-.006	.126	.006	1	.003	.147*
	Sig. (2-tailed)	.648	.933	.087	.938		.972	.046
	N	175	184	184	184	184	184	184
SC4	Pearson Correlation	.054	.231**	.373**	.309**	.003	1	.396**
	Sig. (2-tailed)	.474	.002	.000	.000	.972		.000
	N	175	184	184	184	184	184	184
SC5	Pearson Correlation	.310**	.749**	.621**	.757**	.147*	.396**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.046	.000	
	N	175	184	184	184	184	184	184

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

HSGPA is significantly correlated with 3 of the T1 aggregate measures, but the correlations are weak to moderate.

This is good because you would hypothesize that this should be so; a validity check as it were.

This connection is not really there to speak of at T2, which is good, because you have the intervening variable, HIGHER EDUCATION.

High School GPA Correlations - Post-Test

		HS GPA	SC0_t2	SC1_t2	SC2_t2	SC3_t2	SC4_t2	SC5_t2
HS GPA	Pearson Correlation	1	.154	.133	.340**	.130	.145	.277**
	Sig. (2-tailed)		.060	.102	.000	.111	.075	.001
	N	175	151	151	151	151	151	151
SC0_t2	Pearson Correlation	.154	1	.317**	.412**	.067	.349**	.849**
	Sig. (2-tailed)	.060		.000	.000	.401	.000	.000
	N	151	159	159	159	159	159	159
SC1_t2	Pearson Correlation	.133	.317**	1	.278**	.061	.286**	.613**
	Sig. (2-tailed)	.102	.000		.000	.444	.000	.000
	N	151	159	159	159	159	159	159
SC2_t2	Pearson Correlation	.340**	.412**	.278**	1	.012	.270**	.743**
	Sig. (2-tailed)	.000	.000	.000		.885	.001	.000
	N	151	159	159	159	159	159	159
SC3_t2	Pearson Correlation	.130	.067	.061	.012	1	.109	.115
	Sig. (2-tailed)	.111	.401	.444	.885		.172	.147
	N	151	159	159	159	159	159	159
SC4_t2	Pearson Correlation	.145	.349**	.286**	.270**	.109	1	.410**
	Sig. (2-tailed)	.075	.000	.000	.001	.172		.000
	N	151	159	159	159	159	159	159
SC5_t2	Pearson Correlation	.277**	.849**	.613**	.743**	.115	.410**	1
	Sig. (2-tailed)	.001	.000	.000	.000	.147	.000	
	N	151	159	159	159	159	159	159

** . Correlation is significant at the 0.01 level (2-tailed).

Appendix B IMLS_AggregateScores_ByInstitution T1 and T2

IMLS2017 Aggregate Scale Scores By Institution

Institution		SC0	SC1	SC2	SC3	SC4	SC5	SC0_T2	SC1_T2	SC2_T2	SC3_T2	SC4_T2	SC5_T2
Goucher	Mean	5.73	4.18	5.82	.45	14.45	16.09	5.18	4.27	5.73	.64	15.45	15.82
	N	11	11	11	11	11	11	11	11	11	11	11	11
	Std. Deviation	1.679	.874	1.471	.522	2.544	3.390	1.991	1.009	1.849	.505	2.544	4.262
McDaniel	Mean	5.38	3.77	5.26	.78	13.76	15.07	5.81	4.19	5.47	1.19	16.26	16.40
	N	87	87	87	87	87	87	81	81	81	81	81	81
	Std. Deviation	1.918	1.086	1.701	.515	3.713	3.500	2.209	1.119	1.501	.527	2.966	3.817
Ursinus	Mean	5.81	3.10	6.28	.69	13.60	15.79	6.71	3.21	6.45	1.02	16.55	17.26
	N	58	58	58	58	58	58	42	42	42	42	42	42
	Std. Deviation	1.969	.986	1.908	.568	3.848	3.538	1.865	.925	1.292	.468	2.725	3.313
Washington	Mean	5.18	3.55	5.27	1.00	13.91	14.91	6.44	3.78	6.67	1.44	15.11	17.78
	N	11	11	11	11	11	11	9	9	9	9	9	9
	Std. Deviation	1.940	1.635	2.195	.447	3.015	4.721	2.351	1.302	1.118	.527	4.314	4.086
Washington & Jefferson	Mean	6.88	4.24	6.53	.88	14.65	18.41	7.31	4.56	6.56	1.25	17.13	19.31
	N	17	17	17	17	17	17	16	16	16	16	16	16
	Std. Deviation	1.453	.562	1.328	.485	2.668	2.399	1.014	.814	1.365	.683	1.544	2.330
Total	Mean	5.66	3.61	5.73	.76	13.84	15.66	6.19	3.95	5.92	1.13	16.30	16.96
	N	184	184	184	184	184	184	159	159	159	159	159	159
	Std. Deviation	1.918	1.105	1.817	.533	3.559	3.595	2.085	1.135	1.512	.548	2.859	3.689

- SC0 = Outcome 1
- SC1 = Outcome 2
- SC2 = Outcome 3
- SC3 = Outcome 4
- SC4 = Confidence
- SC5 = Overall score

Appendix C IMLS_AggregateScores_ByInstitution_ByDemo

SC0 SC1 SC2 SC3 SC4 SC5 * RaceDichotomy * Institution

RaceDichotomy			SC0	SC1	SC2	SC3	SC4	SC5
White	Goucher	Mean	6.14	4.29	6.29	.43	15.29	17.14
		N	7	7	7	7	7	7
		Std. Deviation	1.773	.756	1.113	.535	1.890	2.545
	McDaniel	Mean	5.68	3.85	5.75	.78	14.78	15.98
		N	40	40	40	40	40	40
		Std. Deviation	1.886	1.099	1.391	.480	2.815	2.796
	Ursinus	Mean	5.70	3.00	6.22	.64	13.36	15.50
		N	50	50	50	50	50	50
		Std. Deviation	1.909	1.010	1.972	.563	4.024	3.587
	Washington	Mean	5.60	3.00	4.80	1.00	14.00	14.20
		N	5	5	5	5	5	5
		Std. Deviation	1.817	2.000	3.033	.707	3.873	6.535
	Washington & Jefferson	Mean	6.71	4.29	6.64	.93	14.64	18.43
		N	14	14	14	14	14	14
		Std. Deviation	1.541	.611	1.277	.475	2.468	2.533
	Total	Mean	5.84	3.53	6.05	.72	14.15	16.06
		N	116	116	116	116	116	116
		Std. Deviation	1.851	1.153	1.744	.537	3.391	3.424
Non-White	Goucher	Mean	5.00	4.00	5.00	.50	13.00	14.25
		N	4	4	4	4	4	4
		Std. Deviation	1.414	1.155	1.826	.577	3.162	4.272
	McDaniel	Mean	5.07	3.70	4.75	.77	12.89	14.11
		N	44	44	44	44	44	44
		Std. Deviation	1.970	1.112	1.832	.565	4.249	3.925
	Ursinus	Mean	6.50	3.75	6.63	1.00	15.13	17.63
		N	8	8	8	8	8	8
		Std. Deviation	2.330	.463	1.506	.535	2.031	2.722
	Washington	Mean	4.83	4.00	5.67	1.00	13.83	15.50
		N	6	6	6	6	6	6
		Std. Deviation	2.137	1.265	1.366	0.000	2.483	3.082
	Washington & Jefferson	Mean	7.67	4.00	6.00	.67	14.67	18.33
		N	3	3	3	3	3	3
		Std. Deviation	.577	0.000	1.732	.577	4.163	2.082
	Total	Mean	5.34	3.77	5.14	.80	13.34	14.88
		N	65	65	65	65	65	65
		Std. Deviation	2.041	1.027	1.828	.536	3.838	3.855
Total	Goucher	Mean	5.73	4.18	5.82	.45	14.45	16.09
		N	11	11	11	11	11	11
		Std. Deviation	1.679	.874	1.471	.522	2.544	3.390
	McDaniel	Mean	5.36	3.77	5.23	.77	13.79	15.00
		N	84	84	84	84	84	84
		Std. Deviation	1.943	1.101	1.703	.523	3.739	3.540
	Ursinus	Mean	5.81	3.10	6.28	.69	13.60	15.79
		N	58	58	58	58	58	58
		Std. Deviation	1.969	.986	1.908	.568	3.848	3.538
	Washington	Mean	5.18	3.55	5.27	1.00	13.91	14.91
		N	11	11	11	11	11	11
		Std. Deviation	1.940	1.635	2.195	.447	3.015	4.721
	Washington & Jefferson	Mean	6.88	4.24	6.53	.88	14.65	18.41
		N	17	17	17	17	17	17
		Std. Deviation	1.453	.562	1.328	.485	2.668	2.399
	Total	Mean	5.66	3.61	5.72	.75	13.86	15.64
		N	181	181	181	181	181	181
		Std. Deviation	1.930	1.113	1.823	.537	3.569	3.619

SC0 = Outcome 1
 SC1 = Outcome 2
 SC2 = Outcome 3
 SC3 = Outcome 4
 SC4 = Confidence
 SC5 = Overall score

SC0 SC1 SC2 SC3 SC4 SC5 * Gender * Institution

Gender			SC0	SC1	SC2	SC3	SC4	SC5
F	Goucher	Mean	5.63	4.00	5.88	.50	14.38	16.00
		N	8	8	8	8	8	8
		Std. Deviation	1.768	.926	1.727	.535	2.722	4.036
	McDaniel	Mean	5.48	3.90	5.48	.86	13.86	15.55
		N	29	29	29	29	29	29
		Std. Deviation	2.046	.939	1.639	.516	3.613	3.841
	Ursinus	Mean	5.95	3.13	6.05	.74	13.16	15.79
		N	38	38	38	38	38	38
		Std. Deviation	1.874	1.070	1.958	.554	3.673	3.378
	Washington	Mean	5.33	3.89	5.78	.89	14.33	15.89
		N	9	9	9	9	9	9
		Std. Deviation	2.000	1.269	1.481	.333	2.828	3.371
	Washington & Jefferson	Mean	6.63	4.38	6.63	1.00	14.63	18.38
		N	8	8	8	8	8	8
		Std. Deviation	1.598	.518	1.408	.535	2.722	2.560
Total	Mean	5.77	3.63	5.88	.79	13.73	15.97	
	N	92	92	92	92	92	92	
	Std. Deviation	1.905	1.076	1.753	.525	3.410	3.538	
M	Goucher	Mean	6.00	4.67	5.67	.33	14.67	16.33
		N	3	3	3	3	3	3
		Std. Deviation	1.732	.577	.577	.577	2.517	.577
	McDaniel	Mean	5.33	3.71	5.16	.74	13.71	14.83
		N	58	58	58	58	58	58
		Std. Deviation	1.867	1.155	1.735	.515	3.793	3.325
	Ursinus	Mean	5.55	3.05	6.70	.60	14.45	15.80
		N	20	20	20	20	20	20
		Std. Deviation	2.164	.826	1.780	.598	4.123	3.915
	Washington	Mean	4.50	2.00	3.00	1.50	12.00	10.50
		N	2	2	2	2	2	2
		Std. Deviation	2.121	2.828	4.243	.707	4.243	9.192
	Washington & Jefferson	Mean	7.11	4.11	6.44	.78	14.67	18.44
		N	9	9	9	9	9	9
		Std. Deviation	1.364	.601	1.333	.441	2.784	2.404
Total	Mean	5.55	3.60	5.59	.72	13.96	15.35	
	N	92	92	92	92	92	92	
	Std. Deviation	1.935	1.139	1.876	.541	3.718	3.645	
Total	Goucher	Mean	5.73	4.18	5.82	.45	14.45	16.09
		N	11	11	11	11	11	11
		Std. Deviation	1.679	.874	1.471	.522	2.544	3.390
	McDaniel	Mean	5.38	3.77	5.26	.78	13.76	15.07
		N	87	87	87	87	87	87
		Std. Deviation	1.918	1.086	1.701	.515	3.713	3.500
	Ursinus	Mean	5.81	3.10	6.28	.69	13.60	15.79
		N	58	58	58	58	58	58
		Std. Deviation	1.969	.986	1.908	.568	3.848	3.538
	Washington	Mean	5.18	3.55	5.27	1.00	13.91	14.91
		N	11	11	11	11	11	11
		Std. Deviation	1.940	1.635	2.195	.447	3.015	4.721
	Washington & Jefferson	Mean	6.88	4.24	6.53	.88	14.65	18.41
		N	17	17	17	17	17	17
		Std. Deviation	1.453	.562	1.328	.485	2.668	2.399
Total	Mean	5.66	3.61	5.73	.76	13.84	15.66	
	N	184	184	184	184	184	184	
	Std. Deviation	1.918	1.105	1.817	.533	3.559	3.595	

Appendix C IMLS_AggregateScores_ByInstitution_ByDemo

SC0 SC1 SC2 SC3 SC4 SC5 * Pell Flag * Institution

Pell Flag			SC0	SC1	SC2	SC3	SC4	SC5
N	Goucher	Mean	5.75	4.13	5.88	.38	14.50	16.13
		N	8	8	8	8	8	8
		Std. Deviation	1.982	.835	1.553	.518	2.828	3.720
	McDaniel	Mean	5.47	3.76	5.27	.80	13.88	15.14
		N	49	49	49	49	49	49
		Std. Deviation	1.894	1.128	1.680	.499	3.592	3.175
	Ursinus	Mean	5.88	3.08	6.17	.65	13.69	15.73
		N	48	48	48	48	48	48
		Std. Deviation	1.909	1.048	1.872	.526	4.001	3.444
	Washington	Mean	5.50	3.38	5.13	1.00	13.63	14.88
		N	8	8	8	8	8	8
		Std. Deviation	1.773	1.847	2.357	.535	3.159	5.139
	Washington & Jefferson	Mean	6.42	4.17	6.75	1.00	14.42	18.17
		N	12	12	12	12	12	12
		Std. Deviation	1.505	.577	1.288	.426	2.466	2.588
Total	Mean	5.74	3.54	5.78	.74	13.88	15.70	
	N	125	125	125	125	125	125	
	Std. Deviation	1.858	1.154	1.817	.522	3.562	3.469	
Y	Goucher	Mean	5.67	4.33	5.67	.67	14.33	16.00
		N	3	3	3	3	3	3
		Std. Deviation	.577	1.155	1.528	.577	2.082	3.000
	McDaniel	Mean	5.26	3.79	5.26	.76	13.61	14.97
		N	38	38	38	38	38	38
		Std. Deviation	1.968	1.044	1.750	.542	3.908	3.921
	Ursinus	Mean	5.50	3.20	6.80	.90	13.20	16.10
		N	10	10	10	10	10	10
		Std. Deviation	2.321	.632	2.098	.738	3.155	4.149
	Washington	Mean	4.33	4.00	5.67	1.00	14.67	15.00
		N	3	3	3	3	3	3
		Std. Deviation	2.517	1.000	2.082	0.000	3.055	4.359
	Washington & Jefferson	Mean	8.00	4.40	6.00	.60	15.20	19.00
		N	5	5	5	5	5	5
		Std. Deviation	0.000	.548	1.414	.548	3.347	2.000
Total	Mean	5.51	3.78	5.63	.78	13.76	15.56	
	N	59	59	59	59	59	59	
	Std. Deviation	2.046	.984	1.828	.559	3.583	3.879	
Total	Goucher	Mean	5.73	4.18	5.82	.45	14.45	16.09
		N	11	11	11	11	11	11
		Std. Deviation	1.679	.874	1.471	.522	2.544	3.390
	McDaniel	Mean	5.38	3.77	5.26	.78	13.76	15.07
		N	87	87	87	87	87	87
		Std. Deviation	1.918	1.086	1.701	.515	3.713	3.500
	Ursinus	Mean	5.81	3.10	6.28	.69	13.60	15.79
		N	58	58	58	58	58	58
		Std. Deviation	1.969	.986	1.908	.568	3.848	3.538
	Washington	Mean	5.18	3.55	5.27	1.00	13.91	14.91
		N	11	11	11	11	11	11
		Std. Deviation	1.940	1.635	2.195	.447	3.015	4.721
	Washington & Jefferson	Mean	6.88	4.24	6.53	.88	14.65	18.41
		N	17	17	17	17	17	17
		Std. Deviation	1.453	.562	1.328	.485	2.668	2.399
Total	Mean	5.66	3.61	5.73	.76	13.84	15.66	
	N	184	184	184	184	184	184	
	Std. Deviation	1.918	1.105	1.817	.533	3.559	3.595	

SC0 SC1 SC2 SC3 SC4 SC5 * First Generation * Institution

First Generation			SC0	SC1	SC2	SC3	SC4	SC5
F	Goucher	Mean	5.50	4.00	5.00	.50	14.00	14.50
		N	2	2	2	2	2	2
		Std. Deviation	.707	1.414	1.414	.707	2.828	2.121
	McDaniel	Mean	5.06	3.86	5.22	.75	13.44	14.78
		N	36	36	36	36	36	36
		Std. Deviation	1.912	1.073	1.514	.500	3.745	3.481
	Ursinus	Mean	4.93	2.93	5.93	.86	13.00	14.50
		N	14	14	14	14	14	14
		Std. Deviation	2.129	.917	1.940	.663	4.836	3.838
	Washington	Mean	4.33	4.00	5.67	1.00	14.67	15.00
		N	3	3	3	3	3	3
		Std. Deviation	2.517	1.000	2.082	0.000	3.055	4.359
	Washington & Jefferson	Mean	7.80	4.20	6.40	1.00	16.00	19.40
		N	5	5	5	5	5	5
		Std. Deviation	.447	.447	.894	0.000	1.581	1.342
	Total	Mean	5.23	3.68	5.50	.80	13.63	15.10
		N	60	60	60	60	60	60
		Std. Deviation	2.012	1.066	1.610	.514	3.840	3.606
N	Goucher	Mean	5.78	4.22	6.00	.44	14.56	16.44
		N	9	9	9	9	9	9
		Std. Deviation	1.856	.833	1.500	.527	2.651	3.609
	McDaniel	Mean	5.61	3.71	5.29	.80	13.98	15.27
		N	51	51	51	51	51	51
		Std. Deviation	1.909	1.101	1.836	.530	3.712	3.533
	Ursinus	Mean	6.09	3.16	6.39	.64	13.80	16.20
		N	44	44	44	44	44	44
		Std. Deviation	1.853	1.010	1.907	.532	3.521	3.380
	Washington	Mean	5.50	3.38	5.13	1.00	13.63	14.88
		N	8	8	8	8	8	8
		Std. Deviation	1.773	1.847	2.357	.535	3.159	5.139
	Washington & Jefferson	Mean	6.50	4.25	6.58	.83	14.08	18.00
		N	12	12	12	12	12	12
		Std. Deviation	1.567	.622	1.505	.577	2.875	2.663
	Total	Mean	5.87	3.58	5.85	.73	13.94	15.93
		N	124	124	124	124	124	124
		Std. Deviation	1.843	1.127	1.904	.543	3.427	3.573
Total	Goucher	Mean	5.73	4.18	5.82	.45	14.45	16.09
		N	11	11	11	11	11	11
		Std. Deviation	1.679	.874	1.471	.522	2.544	3.390
	McDaniel	Mean	5.38	3.77	5.26	.78	13.76	15.07
		N	87	87	87	87	87	87
		Std. Deviation	1.918	1.086	1.701	.515	3.713	3.500
	Ursinus	Mean	5.81	3.10	6.28	.69	13.60	15.79
		N	58	58	58	58	58	58
		Std. Deviation	1.969	.986	1.908	.568	3.848	3.538
	Washington	Mean	5.18	3.55	5.27	1.00	13.91	14.91
		N	11	11	11	11	11	11
		Std. Deviation	1.940	1.635	2.195	.447	3.015	4.721
	Washington & Jefferson	Mean	6.88	4.24	6.53	.88	14.65	18.41
		N	17	17	17	17	17	17
		Std. Deviation	1.453	.562	1.328	.485	2.668	2.399
	Total	Mean	5.66	3.61	5.73	.76	13.84	15.66
		N	184	184	184	184	184	184
		Std. Deviation	1.918	1.105	1.817	.533	3.559	3.595

IMLS Sparks! Ignition Grant: IL Framework Cooperative Project for At-Risk
Student Success in Smaller Colleges

Focus Group Research Component

Research Summary provided by Joel Wright, Research Analyst, Ethnographer Consultant

Edited by Jessame Ferguson

February 26, 2018

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Summary Statement

The focus group research summarized herein represents a segment of the overall IMLS grant proposal process, and should be viewed not as a separate endeavor, but rather as an integrated approach to the overall research questions in the grant proposal. In conjunction with the pre-test/post-test survey driven component, the findings from the focus group research help to strengthen the case for the value of librarian-driven pedagogy in positively impacting the academic and intellectual growth of all students, and potentially at-risk students in particular, at the participating colleges.

Far from representing anecdotal accounts, the findings of the focus group research represent an integrated, structured, and disciplinarily vetted research design that uncovers systemic trends in support of the quantitative findings of the overall research endeavor. Together, the pre-test/post-test survey findings and the results from the focus group sessions help to paint a vivid picture of the positive influence that the librarians at the participating colleges are having on minority students.

Particulars of the Focus Group Research

Five focus group sessions were contributed by four participating colleges. However, because of data quality issues in one of the focus group session transcripts, findings from four sessions provided by three colleges were used to pull data. As a result, McDaniel College provided two focus group transcripts, while Washington College, and Washington and Jefferson College each provided additional transcripts.

These four transcripts represented the comments of a combined total of twenty-seven participants, representing six white women, four white men, eleven minority women (including Hispanic women, black/African-American women, one Asian woman, and one Hawaiian/Pacific Islander woman), and four minority men (including two Hispanic men and two black/African-American men). Overall, 52% of the participants were first-generation students, and 52% were Pell eligible (although the composition of first-generation and Pell eligible were not the same, in terms of race/ethnicity and gender). It should be noted that the participants were selected from the first-time freshmen classes at the contributing colleges.

The four transcripts generated fifty-five pages of single-spaced dialogue, and generated at least nineteen topics of discussion, organically, out of the dialogues themselves. It should be noted, however, that there are many more linkages between the categories than have been explored, due to practical necessity and time constraints. Also, it is possible that further categories could have been derived from the data. As a result, there is a bit of art to the interpretation process, albeit through a systematic approach to organizing the data.

The main categories derived from the transcripts include the topics of conducting research and planning research; comments on databases, including many thoughts on library databases, as well as JSTOR, Ebsco, PubMed, Wikipedia, Google, and Google Scholar; managing the broadness of research topics; use of database features, including Boolean search strings,

following keyword breadcrumbs, and availability of abstracts, among other features; contrasts between skills acquired in high school as opposed to at college; how to judge the relevance of sources for academic work; the role of librarians; and the growing technical skills of students.

Indeed, comments on the growing technical skills of students may prove to be the most exciting, as they show how students are successfully growing in their expertise, but still have much that they can learn from librarians on how to conduct research efficiently and effectively.

Data Quality

Properly conducted focus group research does not result in anecdotal stories, but rather systemically mined, data-driven results that derive from careful research designs. As a result, there are a number of data integrity issues of which one must be aware.

The first standard of research involves the internal and external validity of the findings. External validity means that the findings can reasonably be applied to a wider group than represented in the sample from which data were taken. As with quantitative research, focus group research relies on randomly selected samples of participants to achieve this end, a condition that this research has met reasonably. Two of the institutions attempted to recruit participants from their entire sample, and ultimately held focus groups with all who were able to participate. One institution held their focus group with the entire class, thus reaching all participants.

Internal validity refers to the criterion of successfully measuring the things that are believed to have been measured in the research process. For this criterion, the focus group research did hit certain challenges, as input from some of the focus group moderators at times pushed dialogue (including responses from participants) in directions that were not originally expressed by the participants. This dynamic may tend to have a compromising effect on the responses and comments of participants, if proper care is not taken. However, while this effect can be seen in some of the transcripts' dialogues, it is by no means systemic throughout any of the transcripts, and does not wholly compromise the totality of the outcomes. One simple fix to this effect has been to omit sections of dialogue from the overall findings where the moderator clearly pushes dialogue away from the comments furnished by the participants. Put another way, findings from certain portions of the dialogue have been rejected as reflecting the moderator's opinions and attitudes, rather than those of the participants. While these sections of the dialogue are not useable, they do not invalidate all observations and comments made by participants, and they do not reasonably invalidate the whole of the findings from the focus group sessions.

Internal reliability refers to the consistency with which the focus group research was conducted. This criterion is important because, without consistency in the questions asked and the way questions are asked, there are diminished chances for consistency in the outcomes that derive from the overall research endeavor. While a uniform interview instrument (questionnaire) was devised, the transcripts indicated that questions tended to be posed in different ways during the different focus group sessions, and that not all moderators followed strictly the agreed-upon interview instrument. However, total uniformity in delivery of the focus group sessions cannot be wholly expected to begin with, as the method relies on naturalistic, though structured,

conversation. Further, while moderators tended to vary in style and content of questions asked, all transcripts generated comments from participants that hit on consistent themes. For example, many of the participants from across all four sessions noted that the use of Google turned out to be of limited value as they grew in their awareness of college-level academic standards. Across all transcripts, participants tended to agree that Wikipedia was particularly inappropriate for use in academic work.

External reliability will be a matter for future research that further extends exploration on the topic of the impact of librarians' support of potentially at-risk student populations at participating institutions. As such, there is an opportunity, going forward, to consciously conduct valuable, data-driven research on this topic through continued focus group research. Such research should be carefully planned and vetted, however, in order to ensure a successful continuation of this research topic, and should be conducted in such a manner as to extend the current research, rather than breaking with it.

Summary of Findings

During the analysis phase of this focus group research, two general topics of interest were selected for concentration: confidence in knowledge, and the perceived roles of librarians.

Both of these general topics are easily supported through the analysis of the focus group transcripts, across the multiple categories that arose from the dialogues in them. For example, one major theme that arose from the focus group interviews was how the participants were successfully growing their knowledge and skills, but still only developing incomplete understandings of the research process. However, rather than being the end point of their research capacities, one should recognize that these first-year freshmen were demonstrating detailed, specific, and embedded understandings about the research process that arose directly from a combination of the training they were receiving and the practical experiences that they were being pushed, academically, to accrue. Far from representing negative news, then, their partially-completed knowledge sets are actually testament to the ongoing and successful process of learning solid library research skills through their interactions with librarians at their colleges.

Participants also made many comments about actual experiences they had with librarians, along with the lessons that they learned during these interactions. Many of their accounts referenced special sessions in classes, in which the librarians came to instruct them specifically on topics central to library research at the college level. Other accounts detailed experiences in which participants learned valuable lessons through direct research that librarians helped them complete. At one point, participants learned about interlibrary loan options at their college library while directly participating in the focus group session, demonstrating the impulse of the moderator to teach effective library skills even while exploring the effectiveness of their impact on students. This instance highlights the enthusiasm that college librarians typically show toward supporting students toward academic success. It stands to reason, therefore, that the librarians at the participating colleges are a great academic resource for potentially at-risk students in particular.

What follows is an encapsulation of the findings on three central topics. It should also be noted that random pseudonyms were assigned to the respondents in order to provide a more personable facing for their comments and preserve anonymity. Any direct correlation between these pseudonyms and the actual names of any of the students is merely coincidental.

Following the demographic data are comments and observations in blue font by the primary analyst of the focus group transcripts. These comments are meant to pull out a running set of observations that should tie the vignettes of actual dialogue together in a meaningful fashion. Following these comments, of course, are the vignettes of actual dialogue themselves, set apart in red italics. These vignettes represent examples of the themes pulled from the naturalistically derived categories, as re-organized into the two basic themes listed above. It should also be noted that the natural flow of comments has been cleaned up, in order to aid the legibility of the dialogue. However, wherever possible, the naturalistic tone of the language used has been preserved in order to maintain as much fidelity to the actual dialogue, as recorded in the transcripts, as possible.

Topic 1: To what degree does information literacy instruction affect a student's attitudes towards research and how it supports their success in college?

Antonio provided one of the most direct examples of the impact that the librarian-led pedagogy had on participants. Evoking the non-linear phase of the research model that he learned, he demonstrated how his approach to conducting library research has become more flexible as a result of the instruction that he has received at the college level.

At the same time, Rachel indicated that the information sessions led by librarians were effective enough to “get her started” independently conducting college-level library research. This theme, about how the librarian-led pedagogy helped participants start the process of independently conducting quality research, can be found throughout all four transcripts.

Both participants demonstrated some level of agility, when faced with possible dead ends in the research process.

Moderator: What do you do if you don't find good sources? Have you ever been in that predicament?

Rachel: Yeah. That's when I would, like, change my question. Like, if I'm finding bad sources on a topic, maybe I'll change what I'm searching, or just look up something else, like rephrase it.

Moderator: So, if you can't find good sources, you might rephrase, like, the key words, and think about sort of refining the topic. Antonio, what would you add to that?

Antonio: I'd do the same thing. That's part of that research process they showed us in the library. The research process isn't just a line. At one point there's a circle, and you're constantly changing what you're looking up to try and make it the best article you can.

Moderator: Oh, good. Sometimes it can be difficult to find sources, if your topic is too large, right? So, you had a really good point about key words and narrowing it down, and that sort of thing. Can you think about a time when you're doing library research? What roles did the college librarians play in your research project?

Rachel: Well, it was those information sessions that kind of showed me...how to use the library database, and like where to find it. So, once I finally got to my individual research, I didn't really run into any issues where I needed help from somebody else. But they definitely helped me get started.

Many of the respondents demonstrated, through their comments, how they were developing greater capacities to judge the viability of sources as their technical skills and knowledge about library research grew. For example, Carlos recounted the difference in his approach to judging sources before coming to college and after learning at the college level.

Moderator: Have you become more skeptical about the research that you're reading?

*Carlos: So, basically in high school, you would just look up in Google and search for articles; but basically, when I started college here, it's like I specifically started only going to the Hoover database, so that every single article I looked up was scholarly. **I guess that coming here made me a little more skeptical of the information I was reading.***

Moderator: Do you all agree with that?

All nod yes.

Some participants indicated that they learned foundational research concepts and skills as a direct result of the librarian-led instruction that they received. Others indicated that, even if they came to college with developed research skills, the pedagogy they received improved their existing repertoire.

Note that Alexa is first-generation and Pell eligible, while Carla falls into neither category. It is significant that both likely come from different academic backgrounds and bring different needs with them to college. However, it is also significant to note that the librarian-led pedagogy gave both participants something valuable that positively impacted their college-level research skills.

Moderator: Okay. So...in that class you've had training about how to do research. Do you think the way you approach research has changed since taking that class?

Many yeses.

Alexa: Before I came here, I didn't know what a scholarly article was or what a peer reviewed article was, so that really taught me how to do research and get good sources for how to do a project or a paper.

Carla: When I came here, I already knew how to do research because I had to research papers for high school, but, like, when I got here, I learned more about researching and how to do it. So, that's pretty good too.

Some participants noted that the amount of time required to find sources changed because of their new understandings about how to conduct library research. The normative response was

that the new knowledge and tools that they acquired from librarian-led instruction cut down the time it took to find acceptable sources. However, note Owen indicated that the process took longer for him. Owen's case may highlight a kind of corrective that can come out of the librarian-led pedagogy, in which higher standards and more complex methods communicated to students noticeably pushes them toward greater scholarly standards for themselves.

Moderator: Tell me about the skills you brought into college. What sort of library set skills? If you had to rate it on a scale from one to ten, ten being you knew it, and one being you struggled, how do you rate yourself?

Elena: I think a six, 'cause I knew a lot of things. I knew that you had to search with certain terms, but I didn't know all the filters to use, and it would have taken me more time to figure everything out. Now it takes me less time.

Robert: I would rate myself a six or seven, or maybe in between, like 6.5. I would have an idea on what to look for, but sometimes I was not entirely confident with what I was using or what I found.

Natasha: I would rate myself maybe a seven because researching is a little difficult if you don't know your topic, and finding key terms, 'cause before this research, I had to do research for a different class for English, but it was driving me crazy with what I couldn't find. I figured it out a day or two later, so I say a seven.

Andrew: I think I'll rate myself as a seven, because I'm alright with finding good sources, like how it's published, and reliable sources, but I'm still struggling with some things like [name omitted] citations.

Owen: I think I came in here with a seven out of ten, but when I actually got down to it, finding the key terms for a topic really got me struggling, made the process a little bit longer, so it's more like a five out of ten.

Bradly: I would probably say a ten, because in high school, I had a teacher, she basically made it her business for us to know how to research and how to do it, in a way. Coming into college, I would just say a ten.

Much like Elena and Owen, Rachel indicated that she learned how to refine her search skills and provided one of the clearest statements of how librarian instruction in the classroom directly resulted in a breakthrough for her.

Moderator: Do you have any real memories about using the library databases, like a real aha moment? Like oh, I have this topic [that] I was searching for information [on], and now I really know how to find information in library databases?

Rachel: I think it was after we had our session about how to refine what you're looking up, like put quotations around phrases. It's not just phrases, but it can help.

While Elena and Owen, above, indicated that awareness of specific search features (use of filtering and choosing effective key terms) tended to shorten the length of time in searching for relevant sources, Owen and Natasha also indicated that they learned basic skills for how to quickly judge the relevance of potential sources.

Moderator: What is your takeaway from [the course], in terms of helping you with doing research? What is your general takeaway? What did you get?

Owen: The abstracts are a very good way to save time. I never knew about abstracts until I came to college.

Moderator: So, before you just sometimes read it?

Owen: I skimmed it, but now you have the abstract, and then you see if it is worth it, and you skim that too. So, you have, like, two confirmations that you can use.

Natasha: I do that as well. Like, I learned that, and the librarian also told us to use the conclusion too, and the results, to see whether or not it's actually accurate of what you're researching.

Topic 2: Participants' Increasing Confidence in Knowledge

Early into one focus group session, as referenced earlier, the moderator asked the participants if they would be able to pick out “valid” articles from a stack of articles. The participants expressed some uncertainty, and explained to the moderator that they were just beginning to learn about how to judge the suitability of articles. However, throughout all of the four transcripts, when participants were pushed for specific details, all were able to provide insightful comments on the research process, involving, at various times: how to judge the scholarly integrity of sources; facing the problematics of effective research, such as narrowing topics down in order to conduct effective and timely research; and general critical thinking skills and healthy academic skepticism. Oftentimes, they would directly invoke concepts such as language that reflects scholarly intent, the credentials of the authors, the appearance and quality of citations in the source they were considering, the use of abstracts, management of key terms and the use of advanced database search features, and many other aspects of research.

In conjunction with this early exchange about valid sources, in which participants expressed uncertainty, the ensuing, detailed comments spanning all transcripts paint a vivid picture of effective, yet still-emerging research skills.

Bradly and Owen show the complexity in experiences likely to be had by black/African-American men during their first year of college. Likewise, Natasha and Elena show how gender interacts with race and ethnicity to create a more complex tapestry of confidence and comfort among the participants. Note that both Bradly and Owen are first-generation, Pell eligible students. However, while Bradly expressed a great deal of confidence in his research skills coming into college, Owen noted that he quickly learned how the research process proved more challenging than he initially assumed.

It is significant, however, to note that Owen, one of the black/African-American men in the study, ranked his initial research skills considerably lower than his co-participants. However, in following the narrative about this particular student throughout this report you can see how his skills are developing and his understanding of information literacy concepts is improving.

Moderator: Tell me about the skills you brought into college. What sort of library set skills? If you had to rate it on a scale from one to ten, ten being you knew it, and one being you struggled, how do you rate yourself?

Elena: I think a six, 'cause I knew a lot of things. I knew that you had to search with certain terms, but I didn't know all the filters to use, and it would have taken me more time to figure everything out. Now it takes me less time.

Robert: I would rate myself a six or seven, or maybe in between, like 6.5. I would have an idea on what to look for, but sometimes I was not entirely confident with what I was using or what I found.

Natasha: I would rate myself maybe a seven because researching is a little difficult if you don't know your topic, and finding key terms, 'cause before this research, I had to do research for a different class for English, but it was driving me crazy with what I couldn't find. I figured it out a day or two later, so I say a seven.

Andrew: I think I'll rate myself as a seven, because I'm alright with finding good sources, like how it's published, and reliable sources, but I'm still struggling with some things like [name omitted] citations.

Owen: I think I came in here with a seven out of ten, but when I actually got down to it, finding the key terms for a topic really got me struggling, made the process a little bit longer, so it's more like a five out of ten.

Bradly: I would probably say a ten, because in high school, I had a teacher, she basically made it her business for us to know how to research and how to do it, in a way. Coming into college, I would just say a ten.

Later in the focus group session, Owen confides that he finds the totality of the research process in college to be a challenge. However, even in the process of voicing his concerns over doing college-level library research, he displays a budding knowledge of the process, and he is able to categorically speak about his experiences utilizing very specific research strategies.

Note as well that Natasha, who initially rated her entry level research skills higher than Owen did his own, agrees with Owen's assessment of the difficulties of doing college-level library research. Likewise, Robert scored himself higher, but still amplified, and elaborated on, Owen's initial comment that college-level library research was harder than initially anticipated.

In the case of all three respondents, one can see how these students are grappling with the research process while simultaneously growing their research skills out of their difficult initial experiences in exploring topics for course papers. Rather than communicating bewilderment and futility, however, all three respondents uncover very specific technical skillsets that are arising from their experiences. Likewise, their concerns uncover how their judgement in the research process is evolving into a college-level understanding of how to retrieve relevant data for course papers.

Moderator: What challenges are you running into, in terms of your research?

Owen: Personally, all of it, because researching is hard to me: key terms, weaving in and out quotations, knowing when to paraphrase, summarize, or cite. It's all a challenge.

Natasha: I have to agree with what he said. That and the fact your sitting in front of screen reading for maybe an hour because the article is long, and you get distracted. [It doesn't] matter if you get distracted that fast or if you don't, or whether [you] concentrate on that one thing. Then, you got to look at more than one article, especially if they ask for more than one reference, so you are looking at all of these articles, and you're just looking at a screen for hours, until you're done.

Robert: I guess I have the same challenge as with Natasha and Owen. I'm typing up my assignment from the article, and I get to a point where I'm not really sure if my article lines up with what I'm trying to say, or if it makes sense, or if it doesn't have the information I had. Even if I'm trying to go through the article, and it's too long, and I get distracted, or if it doesn't have enough information, or if it doesn't have the information that I need at all.

Likewise, Bradly, Owen, and Andrew comment on their levels of comfort engaging in library research after learning more about the process through college-level instruction on the topic.

Owen couched his response in terms of being “pushed” to use the library website, which he did not like because it required greater technical skill and judgement to use effectively.

Commenting off of Owen's response, Andrew and Bradly point out that library research at the college level is proving to be more challenging. However, both Andrew and Bradly can clearly see the benefits of these higher research standards, including greater focus on one's topic and greater persuasiveness.

Note that Owen ends by inadvertently identifying a possible focus for a librarian-lead instructional class session, reflecting not only his persistent unease with the process, but also the positive impact that these class sessions have had on him to begin with.

Moderator: So now that you're taking this class, how has it influenced your thinking about how to do research? If you compare it to before you took the class, has there been a difference in how you approach class research as a result of this course?

Owen: They definitely push you to use the [name omitted] Library website, and personally I don't like it because of how specific you have to be. I already struggle with finding keywords with my research topic.

Moderator: So, you must use [specific Library name]?

Owen: They push you to. You don't have to.

Moderator: Ok. Anybody else? Differences before and after?

Andrew: I'll jump on what Owen said. They do push you to use [specific Library name] more, but I think they're looking at it as in, you know, that [name omitted] Library will have more things that are more specific, and really, like, [narrower] than going on your own [and] finding some things, which in some ways can be helpful or it can be a disadvantage.

Moderator: Have you found it helpful or not helpful?

Bradly: I found it helpful because they push you to use scholarly sources, which will make your writing more believable, like, more persuasive.

Owen: Of course, it's generally helpful because of what Bradley said, but I find it difficult because, again of, like, key terms. We do the classes on how to distinguish if your source is scholarly or not, but I don't think we've had a class—at least I haven't—where they say find this, and we can help you find key terms on the subject or topic.

However, notice that Owen, despite voicing his discomfort with the process of doing library research at the college level, speaks directly and knowledgeably about how he is more effective as a researcher specifically because of his college work to date. In his further response, one can see how he is developing powerful skills to evaluate information and arguments as acceptable at the academic level.

In one context, then, Owen seems to be less confident about his research skills directly because he realizes that more is expected from him at the college level. In another context, though, one can clearly see how he is gaining solid technical skills and powers of judgment directly because of the instruction that he is receiving.

Note that Owen's comments here resonate with the other participants in the focus group session. Especially in Natasha's reflection on Owen's comments, we can see the impact of the instruction that the participants are receiving directly from the librarians. This theme, regarding the value of the in-class instruction sessions, can be found in all four focus group transcripts.

Moderator: What is your takeaway from [the course], in terms of helping you with doing research? What is your general takeaway? What did you get?

Owen: The abstracts are a very good way to save time. I never knew about abstracts until I came to college.

Moderator: So, before you just sometimes read it?

Owen: I skimmed it, but now you have the abstract, and then you see if it is worth it, and you skim that too. So, you have, like, two confirmations that you can use.

Natasha: I do that as well. Like, I learned that, and the librarian also told us to use the conclusion too, and the results, to see whether or not it's actually accurate of what you're researching.

As was mentioned in Topic 1, Carlos became “*a little more skeptical of the information I was reading.*” To which other participants in the session agreed. Participants in another focus group session echoed Carlos' thoughts on judging the credibility of sources.

Moderator: So, how do you tell if a source is scholarly?

Rachel: It'll come from a university, like, [the author] will specifically have some kind of degree, and it'll be peer-reviewed, so it goes through this process of making sure it's legitimate. That's the main thing, I think.

Moderator: Antonio, is there anything you would add to that?

Antonio: I just click journal article and peer-review before I even look at them, so that it's more likely to be scholarly than not. And then I kind of look at who the author is, and how they...I don't know...if the author seems credible, like, they have to have some reason for knowing what they're talking about.

Further, one can see how the respondents are beginning to interweave judgment skills in order to make better arguments in crafting research for their class papers. For example, in explaining the difference in her approach to doing research between high school and college, Elena states that she now looks specifically for scholarly, peer reviewed sources rather than whatever she can find through a simple Google search on a topic.

Moderator: What's different between college and high school, in general, in terms of research? What have you found to be different?

Elena: In high school, I mostly used Google. I didn't go on the library website in high school, but now I go on the website to make sure everything is scholarly and peer reviewed.

Moderator: So, when you searched, and something came up on Google in high school, did you find out what it was?

Elena: Nah.

Moderator: You just used it.

Elena: Yeah.

Moderator: Anyone else, between high school and college?

Robert: I did the same thing as Elena did.

Participants in another focus group were specific about how they approached judging the suitability of sources. In some instances, their accounts revealed how they worked through problematic areas in their research projects by re-focusing their efforts in slightly different directions. It should be noted that the problem-solving skills that they recount here are hallmarks of the kinds of instruction that participants throughout all four sessions mentioned, such as the use of synonyms and careful selection of keywords, and working from broader, less reliable sources (such as Google) to narrower, but more academically suitable platforms (such as college library databases).

Moderator: If you choose a keyword, and you find lots of stuff, but it might not be relevant, how would you go on from there? Think about your topic in health and technology, how do you start then?

Andrea: In the databases, they have little words that you can click on that basically advance what you're looking at. Those helped me a lot in my research, because it was, like, things I wouldn't have thought of, like, keywords I could use. So, those really helped me further my research, if I was stuck in a dead end or anything like that.

Moderator: If you did your mapping, how would you extend your mapping?

Rebecca: Well, with the three aspects of health, I listed them out and then just looked for synonyms [...] and just kept mapping it out, and used those words to do my research.

Carter: I searched way too specifically, and nothing of use would come up in the database. So, I'd search [for] the app that I used[,] "my fitness pal." I searched, "my fitness pal and its influence on calorie intake," or something like that, and nothing would come up.

Moderator: And then you did what?

Carter: I just shorten it down, because after that, I came to class, and it was like, "broaden your search more and you'll find things."

Moderator: Alright, you touch on another point. So, you went keywords, links, mapping, extending your search or narrowing it. Ok, and when you extended your search what did you find?

Carter: I found things more relevant to my paper. I didn't find exactly what I needed, but I found things that strengthened my points.

Moderator: So, you went to Google Scholar, you just went to the internet, and then everybody seemed to have ended up eventually in the library databases. How was that different?

Lana: The library databases provided more scholarly journals, so I didn't go there until I was ready to find specific sources that I was definitely going to use in my paper.

Moderator: And what'd you find in Google?

Andrea: Google just has everything. Like, everything that is on the internet is on Google that you'll find on your topic, so it's really just broad, and it might not be as reliable though.

In the end, even past the lack of precise language that the participants used to comment on the topic of college-level library research, comments from across all four focus group sessions tended to indicate a common practical knowledge about how to conduct effective research, even while demonstrating at times some lingering uncertainty about the process.

Moderator: How can you tell if a source is scholarly? 'Cause this is what's going to help you in selecting your source, right? Yes, Carter?

Carter: Citations from other authors?

Moderator: Citations, yes. How can you tell if it's scholarly?

Rebecca: Also, if the authors have a Ph.D. in that specific department?

Moderator: Yes, if they are experts in that area.

Lana: Sometimes, the organization name is on the document.

Moderator: Yes. Organization. Yes.

Lisa: It's usually peer-reviewed.

Moderator: Peer reviewed. Yes.

Paul: Um, this isn't as important as the others; it uses language that reflects scholarly intent.

Moderator: That is [as] important as the others. That the language does reflect the subject or the level of a research.

Topic 3: Perceptions on the Roles of Librarians

Focus group participants from across all four sessions gave accounts of interactions with college librarians, both in terms of receiving instruction and in terms of receiving assistance in conducting actual research. From these accounts, librarians fulfilled their roles as instructors both within the contexts of formal classroom instruction and in terms of their general value as knowledgeable support staff.

For example, both Rachel and Antonio expressed their initial skepticism about receiving classroom instruction from librarians. However, both voiced their opinion that the instruction that they received turned out to be of practical value for them.

Moderator: That's all the questions I have. Is there anything you'd wanna communicate to me, about the experience or how it could be better, or concerns that you have?

Rachel: I was initially kind of skeptical because I was, like, "Oh great. Another dumb library thing." But it worked out. It was helpful.

Antonio: They seemed like they are nice people, and they helped us out with figuring how to go about this big research paper we have for class. Overall, I thought it worked really well.

Both Rachel and Antonio were further able to provide accounts detailing what they learned in these librarian-led class sessions, including directly learning from the librarians about what kinds of support they could receive from them.

Note that these in-class sessions did not simply impart knowledge about librarians. Toward the end of the series of sessions, students were given an opportunity to learn practically about librarian assistance while actually working on their research topics. Thus, librarian-led pedagogy was intertwined with actual practical assistance. Accounts across all four transcripts support the idea that interactions with librarians were both helpful in practical terms and instructive at the same time.

Moderator: What did your class do in the library? How many trips to the library did you make? Did you have multiple sessions in the library?

Rachel: Yeah. I think, like, three.

Antonio: Yeah, three or four.

Moderator: Do you remember, what did you do at those sessions?

Rachel: Well, I missed the first one, but at the second one, we talked about scholarly articles and what they are, I think. And then about how the research process works. And, so, I did learn what a scholarly article is, and that. And I think the next one we actually used the database and figured out how that worked.

Antonio: I think at the first one, they told us what a librarian does.

Rachel: Like, the ways they can help, I guess.

Antonio: In the last one that we went to, after explaining the research process, we were sort of left to use what we learned for our research paper in FYS. And they were there to help us if we needed their help.

Carla echoed Rachel and Antonio's accounts of how instruction and practical support tend to go hand in hand, when librarians were concerned.

Moderator: So, how do you get started with these topics? How do you know what kinds of words to use when you do a search?

Carla: Well, we took library courses on how to do research, so I, like, kinda used what they taught me to go on to the database. But, I also went into the library to get help from one of the researchers, and that really helped a lot too. They told me what to do. Like, told me what to do to put quotations around [my search terms], or if I need to use other words that mean the same thing.

Indeed, many of the participants recounted stories of how they sought out support for the librarians for specific help. For example, Owen recounted how librarians helped to pull knowledge out of him that he hadn't realized was inside of him.

Moderator: Has there been anything a librarian has done for you that really stands out in your head?

Owen: I didn't know what to talk about in my essay, so I went to a librarian, and I was surprised. She got so much information out of me when I didn't know what to talk about. She asked questions that made me rethink and bring out information that I didn't have.

Likewise, Natasha and Bradley spoke very highly of their experiences in seeking out the help of librarians.

Natasha: I am not going to lie to you, but when it comes to librarians, they have, like, special powers. Every time I go to a librarian, they always teach me something with, like, a new little symbol. And I'm like, WOW! I went through eighteen years, and I didn't know what that little symbol meant. Wow. And I feel like, wow, there's so many things they know that we don't know that helps with research.

Bradly: Also, I like that the librarians each have specialized categories. So, like all of them are generally educated on topics, but I had my paper on biology, and I booked it with [a specific librarian—name omitted], and her specifications are in the sciences. Like, natural sciences. And she is very educated on those topics. So, she can help me better. Any major we have or classes we have, we have a research librarian that specializes in that.

Natasha: That's also very helpful.

Moderator: Do you all know who the special librarian is for the subject of your research?

Many yeses.

For some participants, take-away lessons from the classroom instruction sessions provided foundational principles for how to use citation and sources. For example, Irena recounted how she learned when and why to cite a source directly as a result of categorical in-class instruction from both her professor and the visiting librarian.

Moderator: So, tell me about the times when you've had to include sources in some of your class work. How did you decide whether to include a source or not? How did you know if a source was going to be considered relevant to the research you were doing?

Irena: Usually, well, my English teacher told me—or maybe it was a librarian—that any source you use—even if you are going to just find out information or more about that topic—cite it, because you've technically used it.

Further commenting toward the end of their session, Rachel and Antonio spoke directly to the positive impact that assistance and instruction from the librarians had on the quality of their work.

Moderator: So, how would you have felt trying to do this project without the library's help?

Rachel: Probably not too good. I'd still be using Google.

Antonio: I don't know. I probably would still use the library's website, thanks to Composition, but [I] probably wouldn't have found very good articles.

Other participants commented on the lessons that they learned directly from the instruction provided by librarians. Elena and Robert both commented on how the librarians helped them to tighten their research endeavors by narrowing their focus and better managing the use of key terms.

Notice how Elena and Robert's accounts reflect the kinds of comments common throughout all sessions, reflecting the levels of confidence and emerging practical knowledge that participants were demonstrating. While the subject of the roles that librarians play and the levels of confidence shown by the participants may seem to be separate issues, in reality, they are tightly bound up with each other, demonstrating the value of the roles that librarians play in teaching first-year freshmen how to conduct effective college-level research.

Moderator: Before and after this class, [course detail omitted]? Any general thoughts about benefits or challenges?

Elena: They kind of taught us that, if you don't find what you're looking for with your key term, maybe it's too specific or too broad, and different ways around it to get what you want. You can read some articles that have to do with the topic, and you can find key terms in those articles.

Robert: I was taught the same thing as Elena, where, like, for key terms, if we're not finding the right thing, it could be because our key terms are too broad or way too specific.

While many of the participants' accounts focused on the value of instruction and the specific lessons that they learned from librarians, many other accounts focused on the practical help that they received from the librarians at their colleges.

For example, Natasha spoke most pointedly about the value of her actual experiences in reaching out to librarians for support in her research endeavors.

Moderator: I think it was Natasha [who] talked about having a librarian walk you through how to do searches, and those sorts of things. So, let's talk about the experiences of interactions with librarians here. How many of you have had a chance to ask a question or to talk to someone physically, that is, as opposed to before you go to email?

Natasha: Like, interact with the librarian?

Moderator: Yes.

Natasha: Yes, I have. You can make appointments with them, and they will help you with a research paper and anything that you have. Anything. Like, if you need help, they will help you, and [all] you have to do is go online to the [name omitted] Library database and make an appointment with any librarian of your choice. And there are different librarians for different majors, and they will help you out in any way.

Owen echoed Natasha's general thoughts on the helpfulness of college librarians. As Owen, who generally voiced his concerns about conducting library research, pointed out, he saw the librarians at his college as, "the very first person you go to or the very last you go to." For Owen, then, a first-generation, Pell-eligible black/African-American man, librarians are clearly instrumental to his academic success going forward.

Notice, as well, how the accounts provided by the participants about their interactions with the librarians, always seemed to include a note of gratitude for the positive impact they had on their work, and for the things that they learned from the librarians in the process.

Moderator: From your own understanding, what do you see is the role of the librarians are?

Bradly: You said their role?

Moderator: Yeah.

Bradly: I think their role is to help you find things you can't find on your own...Like, if your topic is too broad, they're there to help you switch your questions up and help you find something you need.

Owen: I think they're the very first person you go to or the very last you go to. First, so you can get your bearings, and know what your topic is, and fine it down; and last, if you're struggling with the conclusion and the source page, if you have a paper.

Andrew: In some of the English [class] meetings [where we came] to the library, they emphasize that that's what they are here for: to help us. That they are like a resource. I noticed that, when I went on the Hoover website, I had to do a paper, I messaged one of them, and they responded instantly. They're always there to help you. They are great.

All in all, participants across all four focus group transcripts demonstrated emerging practical knowledge about a range of aspects related to college-level library research. However, despite their growing acumen, all participants tended to also demonstrate that their understandings of the research process were far from complete. Knowing where to go to attain the necessary assistance is a major factor in ensuring potentially at-risk students have the tools to succeed.

New Project Timeline and Deadlines
As of May 15

Timeline / Deadline	Description	Notes
June 15	Finish and Finalize Indicators	LO1: Jessica, Marianne LO2: Diane, Christine LO3: Jessame, Samantha, Ronalee LO4: Jim, Diane
June 16 through August 21	Learning Activity Team	Members: Christine, Jessica, Samantha, Marianne, Jim Develop plans together with chance to focus on individual development and share what each will do. Refer to Indicators for this work (keep an eye on if they change much during test item development).
July 7	Finish Writing Test Items	Based on Indicators Test question writing team: Diane, Jessame, Pam, Ronalee
July 15	Reviewers Submit Feedback on Items	
July 31	Finish Incorporating Feedback and Items Ready for Beta-Testing with Students	Need to recruit 2 beta testers from each institution - try to get FY students if possible.
August 11	Deadline for Beta-Testing	
August 21	Incorporate Findings from Beta-Testing and All Items Finalized	Pre and post test instrument complete and ready to use
Your Student's First Few Days on Campus (late August/early Sept.)	Administer Pre-Tests to students you will provide instruction to on IMLS learning outcomes	Ideally this would be in their first class session, or provided to them online with encouragement. They must take it before you teach them anything. <ul style="list-style-type: none"> • If online, schedule reminders for those who haven't taken it <u>GOAL</u> - Capture all of the students in classes you will teach with IMLS LOs
Work October 1-31; Deadline Nov. 1	Focus Group Development	Team Members: Kerry, Jessica, Ronalee (?)

September through October	Deliver Instructional Experiences	These begin after the pre-tests are taken
Early November	Administer Post-Tests	After instruction and before focus groups
November	Administer Focus Groups	<p>After post-test completed Ideally, target to one class (more can be done if you have time/interest).</p> <ul style="list-style-type: none"> • Sample size per focus group needs to be no fewer than 5 and no more than 10. • Take into consideration that some students won't show up.
November 30	Last official day of IMLS grant	All budgetary expenditures must be paid out by this date; this means all receipts or requests for payment need to be sent to Jessame at least 10 days prior for processing.
February 1	All data and project content from each institution must be sent to Jessame by this date.	<p>Sooner would be better if possible. Must include:</p> <ul style="list-style-type: none"> • pre and post test raw data files, matched with individual results and demographic details on each student; • all instructional content and intervention implementation details; • and all focus group details, data and transcripts.

Indicators for Student Performance for the IMLS Cooperative Project

See note about the numbering conventions at the end of this document.

Outcome 1 -- Learners will understand that information creation is a process.

Section 1:

I.1.1.A - Given an information item, students will determine its purpose.

- T.1.1.A (Q17) "What is the purpose of this article?"

I.1.1.B - Given an information item, students will determine its intended audience.

I.1.1.C - Given an information item, students will indicate the authority/credibility/reliability that is ascribed to the source. (formerly I.1.1.D)

- T.1.1.C (Q18) "What evidence is there that the authors of this article are experts?"

Section 2:

I.1.2.A - Students, as authors, will identify what their audience considers authoritative when choosing sources for their work.

- T.1.2.A (Q20) "What is the most likely reason that a psychology professor would consider a peer-reviewed journal article to be the most credible source...?"
- Q3 "What is the problem with using a source for an academic paper when you cannot determine who is responsible for it (e.g., there is no author or organization listed)?"

I.1.2.B - Students will recognize that the process for creating and sharing information evolves over time.

- See related items below

Section 3:

I.1.3.A - Given a sample set of sources, students will order/sort them into their appropriate locations on the information timeline.

- T.1.3.A (Q22) "What is the most likely order in which these sources were published?"

I.1.3.A.1 - Students will be able to determine why a peer-reviewed article requires more time to produce.

I.1.3.A.2 - Given a research project, students will indicate why scholarly books are a useful source to start with due to their comprehensive coverage / purpose / intent.

- See I.3.3.C for a similar concept
- Some of the concepts above were covered in the "Different Sources" worksheet exercise and in class content

Outcome 2 -- Learners will apply the information seeking process.

(ACRL Framework: Research as Inquiry and Searching as Strategic Exploration)

Section 1: Understand the information seeking process, that there are multiple steps, and that it is iterative

I.2.1.A. When asked what best describes a given research process, students will recognize the role that persistence plays in successful research.

- T.2.1.A (Q10) “What does Loni’s process show about research?”
- T.2.3.G (Q11) “Which of these descriptions best explains why Loni successfully completed their research?”

Section 2: Determine where to seek information for a need and understand what each option might provide

I.2.2.A. Given an example of an information need, students will determine:

- a. The type of information (or resource) that will best meet that need (e.g. newspaper, scholarly article).
- b. Where would be the best place to seek that type of information (e.g. library database, the web).

Section 3: Develop search strategies that support the information need

I.2.3.A. Given an example of two search strategies, one with focused, narrow, specific terms and another on the same topic, with broad, non-specific terms, students will identify which search strategy will probably yield more helpful results.

I.2.3.B. Given a topic for a research assignment:

- a. Students will identify the key concepts/ideas for a given topic
- b. Students will identify the optimal search string for a given topic

I.2.3.C. Told that a search returned **irrelevant results**, students will identify the best possible alternative search strategy.

I.2.3.D. Told that a search returned **too many results**, students will identify the best possible alternative search strategy.

- T.2.3.D (Q6) “Sam runs a search in a library database. They get thousands of search results. What should they try next?”

I.2.3.E. Told that a search returned **not enough results**, students will identify the best possible alternative search strategy.

- T.2.3.E. (Q5) “Maddy runs a search ... only 10 results. Some of them are relevant, ... What should she try next to get better search results?”

I.2.3.F. Students will be able to recognize an open-minded research process.

- T.2.3.F (Q4) “Which of Sivonne’s strategies shows that she is open to learning from her research and changing her mind?”

Outcome 3 -- Learners can read and interpret search results in order to discern if the results contain items/sources which may meet an information need.

(ACRL Framework: Information Creation as a Process, Authority is Constructed and Contextual, and Searching as Strategic Exploration)

Section 1: Looking at the page - understanding the actual results of your search

I.3.1.A. Given a screenshot of an example discovery service search results screen, students will be able to identify where the results appear on the page.

- T.3.1.A (Q2) "Which of the areas contains the search results?"

I.3.1.B. Given a search result, students will be able to identify the author.

- T.3.1.B (Q12) "Who is the author of the article in this search result?"

I.3.1.C. Given a search result, students will be able to identify the title.

- T.3.1.C (Q24) "What is the title of the article in the search result below?"

I.3.1.D. Given a search result, students will be able to identify the source.

- T.3.1.D (Q28) "What is the name of the journal where the article in this search result was published?"

Section 2: What are the things you can look for to interpret the record

I.3.2.B. Given a search result with an abstract, students will be able to identify why they would use an abstract as part of their evaluation process.

- T.3.2.B (Q13) "Tony did a search and found this in his list of results. Why would he want to click on the link that will show him the abstract?"

Section 3: Help them understand there are different types of needs (depending on how contemporary/recent/new their topic is)

I.3.3.A. Given a scenario in which a student needs information on a current or recent topic, students will be able to identify the most credible result among a set of choices.

- T.3.3.A (Q14) "Which of the following results should Jim choose if he wants to be considered credible?"

I.3.3.B. Given a scenario in which a student needs information from a peer-reviewed source, students will be able to identify the next step to investigate to determine if it is peer reviewed.

I.3.3.C. Given a scenario where a student needs background information on a given topic, the student will select appropriate criteria for determining which search result would be best for background information.

- T.3.3.C (Q15) "Which is the best source for Rowan to select for this stage of their research?"
- Part 2 T.3.3.C (Q15.3) "Which of the following criteria was the most important to consider when deciding which result was the best for Rowan to use to help them understand their topic?"

Outcome 4 -- Learners will recognize the librarian as a go-to person for research help.

(ACRL Framework: Research As Inquiry, Disposition “Seek appropriate help when necessary”; Searching as Strategic Exploration, Disposition “Seek guidance from experts such as librarians, researchers & professionals.”)

I.4.D. Given a question about what a librarian’s role is at a College library, students will choose the answer that most closely identifies them as a coach/teacher.

- T.4.D (Q21.3) “Which statement below most accurately describes the role of librarians at your college?”

I.4.E. Asked to list (in order of first-to-last) people they would ask for help on a research paper, students will place librarians in the top 2 spots on that list.

- T.4.E (Q19) “Select each person listed below and then use the arrows to put them in the order in which you would most likely contact them for additional assistance.”

I.4.G. Asked if they plan to consult or if they have consulted a librarian during their time at College, students will answer affirmatively.

- T.4.G (Q21.1) “Think about your time here at college...”
- T.4.G (Q21.2) “Since you have not yet contacted a librarian here for research help, select the answer that best describes what you think you will do.”

A note about the numbering conventions:

During the project some indicators were revised or eliminated, thus there are some oddities in the sequence, but generally this format was followed:

- I = capital i (not #1) stands for Indicator
 - T will be used for test items when created from the indicator
- # following I (or T) stands for the Outcome they belong to (example I.2... = this is an indicator for Outcome 2)
 - # following the Outcome # = unique to those Outcomes that have multiple defined sections, used to denote what section of the Outcome it belongs to (example I.3.2... = this is an Indicator for Outcome 3, Section 2)
- Final capital letter - indicates the specific indicator in the order it was included in that section (example I.4.C. = this is the 3rd indicator that was created in that outcome/section and is the unique identifier for that specific indicator. The test item created for this indicator will be identified as T.4.C.)