



Analysis of Artifacts aligned to Marshall’s Baccalaureate Degree Profile (BDP) Academic Year 2019 – 2020

We dedicate this report to the memory of Professor Joan St. Germain, who was a dedicated member of this Team for seven years (from 2013-2019). We miss her!!

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Executive Summary

Background

Recommendations from the 2019 Assessment Workgroup (Updates are in red).

1. Interrater reliability analyses this year showed that the need for reviewers to make judgments regarding which outcome traits instructors had intended to align their assignments resulted in much weaker score agreement than was the case when raters were certain of the instructors’ intended trait alignments. For *Intercultural Thinking* and for *Ethical and Civic Thinking* the percentage of rater dyads where one rater gave the artifact a score and the other said it was not aligned to the trait ranged between 19% and 35%. The best way to address this problem is to reiterate to instructors that it is important that they provide assignment instructions that clearly state to which traits of the

BDP outcome their assignments align. Currently, directions for doing this are included in the instructor tab within Blackboard. The Summer Assessment Team suggested that the Office of Assessment and Quality Initiatives create an organization within Blackboard to make these instructions more prominent, as well as to feature other important information about aligning assignments to Marshall's BDP and other important outcomes (e.g. capstone, FYS, and baseline). Instructors can also receive emails through the Blackboard organization drawing their attention to these instructions. After discussion in our final meeting we decided that the Online Design Center will work with the Office of Assessment and Quality Initiatives to design a more explicit assignment to outcome trait alignment system that will make more explicit how to align to various traits within an outcome. Specific outcome statements for each trait will be provided for this purpose. A subcommittee of the University's General Education Committee was formed in fall 2019. Among their recommendations was that we create organizations within Blackboard to provide shorter general education results summaries and recommendations to improve pedagogical practices. Chris Sochor has created Blackboard organizations for FYS, Multicultural and International Courses, CT courses, and Writing Intensive Courses. Following discussion among Assessment Team members this summer, we decided on some modifications to last year's recommendation (please refer to recommendations 1 and 3 at the end of this report). The Office of Assessment and Quality Initiatives will create short reports to be disseminated to faculty via the methods discussed in recommendation 3 (end of report) following this summer's assessment.

2. An alternative to recommendation #1 is to allow the Summer Assessment Team to evaluate each assignment and arrive at consensus regarding the traits to which it aligns before beginning the assessment process. This recommendation also was made at the end of the summer 2018 assessment process. However, the team believes that recommendation #1 would be preferable, primarily due to the large number of potential assignments to be reviewed and the best use of time during the assessment project. We have not yet implemented this suggestion, but it is still under consideration.
3. The Summer Assessment Team recommends that results of these assessments be reported to Faculty Senate and to the General Education Council. In reviewing artifacts aligned to *Intercultural Thinking* this year, it became apparent that very few courses with **International** designations aligned assignments to the *Intercultural Thinking* outcome in Blackboard. The Office of Assessment and Quality Initiatives will provide the General Education Council with an inventory of *Multicultural* and *International* courses that are providing uploads aligned to *Intercultural Thinking*. The Summer Assessment Team recommends that the General Education Council follow-up with Department Chairs regarding this requirement and that, if courses fail to comply, their **Multicultural** or **International** designations be removed. This has not been accomplished (please refer to recommendation 5 at the end of this report).

Procedures for 2020 Assessment

General Procedures

In May 2020 we evaluated student artifacts produced in response to course assignments aligned to *Information Literacy*, *Integrative Thinking*, and *Metacognitive Thinking*. A group of eight faculty representing several academic colleges from across the university evaluated a sample of these artifacts using Marshall's outcome specific rubrics. These rubrics are included in the supporting documentation. Our sample initially consisted of 300 artifacts, 100 per outcome. However, during scoring raters agreed that 41 artifacts (13 aligned to *Information Literacy*, nine to *Integrative Thinking*, and 19 to *Metacognitive Thinking*) were not aligned to the outcomes to which they had been tagged. This reduced the number of artifacts to 259 (87 *Information Literacy*, 91 *Integrative Thinking*, and 81 *Metacognitive Thinking*). One additional artifact aligned to *Integrative Thinking* and another aligned to *Metacognitive Thinking* could not be accessed, reducing the number of scorable artifacts to 257 (87 for *Information Literacy*, 90 for *Integrative Thinking*, and 80 for *Metacognitive Thinking*). Each artifact was read by two independent reviewers (to arrive either at scores or to agreements of nonalignment for specific traits of each outcome). This project was coordinated by the Office of Assessment and Quality Initiatives.

Scoring Procedures

Evaluators assessed each artifact using the following scale:

Special Scoring Codes	
Score	Explanation
N/A	In the opinion of the evaluator, the artifact was misaligned with the outcome/trait to which the instructor had tagged it, or the evaluator saw no evidence of the trait in the student's work.
Regular Scoring Codes	
These codes were given to artifacts that, in the opinion of the evaluator, were aligned with appropriate outcomes/traits and contained enough information to allow assessment.	
1	The artifact demonstrated Level 1 performance.
2	The artifact demonstrated Level 2 performance.
3	The artifact demonstrated Level 3 performance.
4	The artifact demonstrated Level 4 performance.

Please see the supporting information that follows this summary for a detailed explanation of scoring procedures.

General Information about the Sample

Two hundred forty-one (241; 80%) of the artifacts in our sample were drawn from courses at the 100/200 level, with the remaining 59 (20%) drawn from courses at the 300/400 level.

Results and Analysis

One challenge in reporting results of Baccalaureate Degree Profile (BDP) assessment is that, although we began with a sample of 300 artifacts (each of which was designated by instructors to align to one of the BDP outcomes assessed this year), each artifact was analyzed by outcome trait. The total number of traits across the three outcomes was 10 (four traits each for *Information Literacy* and for *Integrative Thinking* and two traits for *Metacognitive Thinking*). As mentioned previously, 41 artifacts were judged to not be aligned to any trait of the outcome to which they had been tagged (or there was no evidence in the student work that they had been). An additional two artifacts could not be scored, one because it was blank and the second because it was saved in a format that assessors could not open. This left 257 scorable artifacts. However, not all artifacts aligned to every trait of the outcomes to which they were tagged. A perusal of our supporting documentation shows that the artifacts evaluated by the Assessment Team aligned to a total of 767 traits using the MU rubrics (312 for *Information Literacy*, 314 for *Integrative Thinking*, and 141 for *Metacognitive Thinking*).

Outcome	Trait (MU rubric)	Total Traits Aligned
Information Literacy	Relevance of Sources	82
	Integration of Information	77
	Assumptions and Biases	67
	Citation	86
Total for Information Literacy		312
Integrative Thinking	Connections among Disciplines	78
	Relation among Domains of Thinking	79
	Transfer	71
	Connections to Experience	86
Total for Integrative Thinking		314
Metacognitive Thinking	Project Management	63
	Self-Evaluation	78
Total for Metacognitive Thinking		141
Totals		767

Results based on course level were as follows:

Information Literacy				Integrative Thinking				Metacognitive Thinking			
Trait	Course Level	Number	Mean (SD)	Trait	Course Level	Number	Mean (SD)	Trait	Course Level	Number	Mean (SD)
Relevance of Sources	100/200	67	2.77 (0.90)	Connections among Disciplines	100/200	64	1.79 (0.65)	Project Management	100/200	34	1.62 (0.70)
	300/400	15	3.43 (0.46)		300/400	14	2.12 (0.82)		300/400	29	2.12 (0.78)
Integration of Information	100/200	64	2.57 (0.83)	Relation among Domains of Thinking	100/200	65	1.81 (0.54)	Self-Evaluation	100/200	49	1.95 (0.82)
	300/400	13	3.04 (0.63)		300/400	14	2.07 (0.65)		300/400	29	2.33 (0.77)
Assumptions and Biases	100/200	57	1.41 (0.68)	Transfer	100/200	57	1.99 (0.67)				
	300/400	10	1.45 (0.64)		300/400	14	2.46 (0.91)				
Citation	100/200	71	2.25 (0.89)	Connections to Experience	100/200	72	1.96 (0.69)				
	300/400	15	2.70 (0.73)		300/400	14	2.25 (0.70)				

For all traits of each outcome, students enrolled in courses at the 300/400 level had higher mean scores than did students enrolled in courses at the 100/200 level. However, the only mean differences that were statistically significant were those for *Information Literacy: relevance of sources* and for *Metacognitive Thinking: project management*. We note that 80% of the artifacts assessed were from students enrolled in courses at the 100/200 level.

A perusal of the chart above shows mean performance for artifacts uploaded from 100/200 level courses ranged from 1.41 for *Information Literacy: assumptions and biases* to 2.77 for *Information Literacy: relevance of sources*. Means for 300/400 level courses ranged from 1.45 for *Information Literacy: assumptions and biases* to 3.43 for *Information Literacy: relevance of sources*. With the exception of the trait *assumptions and biases*, student performance on artifacts aligned to *Information Literacy* was stronger than their performance on *Integrative* and *Metacognitive Thinking*.

Frequency Analysis

Information Literacy				Integrative Thinking				Metacognitive Thinking							
Trait	Course Level	Percent Scoring 3.5 or 4.0	Percent Scoring 2.5 to 4.0	Trait	Course Level	Percent Scoring 3.5 or 4.0	Percent Scoring 2.5 to 4.0	Trait	Course Level	Percent Scoring 3.5 or 4.0	Percent Scoring 2.5 to 4.0				
Relevance of Sources	100/200	36%	73%	Connections among Disciplines	100/200	3%	23%	Project Management	100/200	3%	15%				
	300/400	67%	100%		300/400	7%	43%		300/400	7%	52%				
Integration of Information	100/200	22%	69%	Relation among Domains of Thinking	100/200	0	18%	Self-Evaluation	100/200	4%	37%				
	300/400	46%	85%		300/400	0	36%		300/400	14%	55%				
Assumptions and Biases	100/200	2%	16%	Transfer	100/200	4%	28%	Overall		4%	28%				
	300/400	0	10%		300/400	29%	57%								
Citation	100/200	13%	51%	Connections to Experience	100/200	6%	33%								
	300/400	27%	67%		300/400	7%	43%								
Overall	100/200	19%	53%	Overall	100/200	3%	26%								
	300/400	38%	70%		300/400	11%	45%								
														10%	53%

Frequency analysis showed that, for *Information Literacy*, 38% of students enrolled in courses at the 300/400 level received final scores of 3.5 or 4.0, while 70% of students in these courses received final scores of at least 2.5. However, only 11% and 10% of students enrolled in 300/400 level courses received scores of 3.5 or 4.0 in *Integrative Thinking* and in *Metacognitive Thinking*, respectively. We must keep in mind, however, that there were very few artifacts drawn from students in 300/400 level courses for both *Information Literacy* and *Integrative Thinking*. Even for *Metacognitive Thinking*, the majority of the assignments we scored this year were from 100/200 level courses.

Results for Course Type

Analyzing results by course type posed several challenges. First, the only course type that is unique (i.e. can have only one course type attribute) is First Year Seminar in Critical Thinking (FYS). Courses can have the other attributes analyzed this year (Critical Thinking [CT], Writing Intensive [WI], Core II, and Capstone) in combination (and many do). So, when analyzing results by course type, we included all courses with the attribute we wanted to assess; this resulted in some courses being included in the analysis for more than one course type.

Critical Thinking (CT) Courses

CT courses in the assessment sample included those that aligned to each of the outcomes assessed. All CT courses are at the 100/200 level. Results are below:

Information Literacy			Integrative Thinking			Metacognitive Thinking		
Trait	Number	Mean Score	Trait	Number	Mean Score	Trait	Number	Mean Score
Relevance of Sources	40	2.79	Connections among Disciplines	54	1.84	Project Management	7	1.64
Integration of Information	41	2.59	Relation among Domains of Thinking	54	1.80			
Assumptions and Biases	36	1.46	Transfer	51	2.0	Self-Evaluation	18	2.06
Citation	41	2.24	Connections to Experience	62	2.0			

While, due to the relatively small /n/s, the results should be interpreted with caution, mean scores for students in Marshall’s CT courses (which are at the 100 and 200 level) suggest performance at level 2 or higher on three of the four traits of *Information Literacy*, on two of the four traits of *Integrative Thinking*, and on one of the two traits of *Metacognitive Thinking*.

Core II Courses

Core II courses in the assessment sample included those that aligned to each of the outcomes assessed: *Information Literacy*, *Integrative Thinking*, and *Metacognitive Thinking*. All Core II courses are at the 100/200 level. Results are below:

Information Literacy			Integrative Thinking			Metacognitive Thinking		
Trait	Number	Mean Score	Trait	Number	Mean Score	Trait	Number	Mean Score
Relevance of Sources	32	2.73	Connections among Disciplines	48	1.84	Project Management	7	1.64
Integration of Information	31	2.40	Relation among Domains of Thinking	48	1.82			
Assumptions and Biases	29	1.48	Transfer	45	1.93	Self-Evaluation	18	2.06
Citation	31	2.36	Connections to Experience	55	1.96			

While, due to the relatively small *n*'s, the results should be interpreted with caution, mean scores for students in Marshall's Core II courses (which are all at the 100 and 200 level) suggest performance at level 2 or higher for three of the four traits of *Information Literacy* and for one of the two traits of *Metacognitive Thinking*. Mean scores approached, but did not reach, Level 2 for all traits of *Integrative Thinking*.

Writing Intensive (WI) Courses

WI courses in the assessment sample aligned to all outcomes assessed: *Information Literacy*, *Integrative Thinking*, and *Metacognitive Thinking*. Results are given below:

Information Literacy			Integrative Thinking			Metacognitive Thinking		
Trait	Number	Mean Score	Trait	Number	Mean Score	Trait	Number	Mean Score
Relevance of Sources	32	3.06	Connections among Disciplines	42	1.92	Project Management	22	1.77
Integration of Information	28	2.59	Relation among Domains of Thinking	42	1.93			
Assumptions and Biases	27	1.33	Transfer	40	2.06	Self-Evaluation	32	2.31
Citation	32	2.52	Connections to Experience	45	2.02			

While, due to the relatively small *n/s*, the results should be interpreted with caution, mean scores for students in Marshall's WI courses suggest performance at level 2 or higher in three of the four traits of *Information Literacy*, in two of the four traits of *Integrative Thinking*, and on one of the two traits of *Metacognitive Thinking*. Although WI courses were at both 100/200 and 300/400 levels, the proportion of artifacts from 300/400 levels included in this analysis was small. Please refer to the supporting documentation for a specific breakdown.

Capstone Courses

Capstone courses in this assessment sample primarily aligned to *Metacognitive Thinking* and all courses were at the 400 level. Please see the supporting documentation that follows this summary for additional detail.

Trait	Number	Mean Score
Project Management	22	2.20
Self-Evaluation	22	2.11

While, due to the relatively small *n/s*, the results should be interpreted with caution, mean scores for students in the capstone sample suggest performance between Levels 2 and 3.

FYS Courses

FYS courses in the assessment sample aligned to all outcomes assessed: *Information Literacy*, *Integrative Thinking*, and *Metacognitive Thinking*. Results are given below:

Information Literacy			Integrative Thinking			Metacognitive Thinking		
Trait	Number	Mean Score	Trait	Number	Mean Score	Trait	Number	Mean Score
Relevance of Sources	24	2.77	Connections among Disciplines	7	1.50	Project Management	26	1.60
Integration of Information	21	2.55	Relation among Domains of Thinking	8	1.88			
Assumptions and Biases	20	1.35	Transfer	5	1.70	Self-Evaluation	30	1.88
Citation	27	2.30	Connections to Experience	8	1.69			

While, due to the relatively small /n/s, the results should be interpreted with caution, mean scores for students in Marshall’s FYS course, the majority of whom are freshmen, suggest performance between Levels 2 or higher on three of the four traits of Information Literacy, at Levels 1 or 2 on all traits of *Integrative Thinking* and *Metacognitive Thinking*.

Conclusion

We used rubrics this year that measured student performance according to the level of sophistication they demonstrated in achievement of each trait of the three Baccalaureate Degree Profile (BDP) outcomes we assessed. BDP outcomes specify what students are expected to achieve at the time they receive their baccalaureate degrees. Admittedly, the proportion artifacts from 300/400 level courses in our sample was small this year, with only 15 artifacts aligning to *Information Literacy*, 14 to *Integrative Thinking*, and 30 to *Metacognitive Thinking*. However, we were pleased that 70% of students who submitted artifacts from 300/400 level courses received overall scores of 2.5 or higher in *Information Literacy*, with 38% receiving scores of 3.5 or 4.0. Although not as high, 53% and 45% of students who submitted artifacts from 300/400 level courses received overall scores of 2.5 or higher on *Metacognitive* and *Integrative Thinking*, respectively. A score of 2.5 indicates that at least one rater assigned a score of Level 3 to the artifact, a score of 3 indicates that both raters assigned a score of Level 3.0, a score of 3.5 indicates that at least one rater assigned a score of Level 4, and a score of 4.0 indicates that both raters assigned a score of Level 4.

When examining mean performance across all artifacts, we noted that, for *Information Literacy*, assumptions and biases emerged as a relative weakness (*mean* = 1.42; *n* = 67) among the traits of this outcome. Only 14% of the 67 artifacts received scores between 2.5 and 4.0 (as compared to 78% for relevance of sources, 71% for integration of information, and 53% for citation). For *Integrative Thinking*, we noted little variation among means scores, which ranged from 1.85 for relation among domains of thinking to 2.09 for transfer. Likewise, for *Metacognitive Thinking* (which had only two traits), mean scores were 1.85 for project management and 2.09 for self-evaluation.

Although the majority of *Integrative Thinking* artifacts were drawn from 100/200 level courses, we argue that there is room to improve performance, especially given the emphasis placed on this outcomes in Marshall's CT courses. We also note that the rubric level descriptions we used this assessment cycle may have been too general and suggest studying the AAC&U's rubric for *Integrative Learning* to see if it might better capture student performance on this outcome.

For *Metacognitive Thinking*, two large categories of artifacts were included in this year's analysis. The first was a group of 40 artifacts from FYS that aligned to at least one trait (26 aligned to project management and 30 aligned to self-evaluation) and the second was a group of 22 artifacts from capstone courses aligned to both traits. While mean scores for capstone artifacts were significantly higher than those of FYS for project management (2.20 for capstone as compared to 1.60 for FYS), the mean differences for self-evaluation (2.11 for capstone and 1.88 for FYS) did not differ significantly. We suggest there is room for improvement on this outcome for students about to graduate from Marshall University. We recommend that more emphasis be placed on these skills throughout the Marshall curriculum.

The Office of Assessment and Quality Initiatives is currently examining the mapping of degree program outcomes to traits of the BDP. We will continue to work with programs that have not yet completed this analysis.

Recommendations from the 2020 Assessment Team

The Summer Assessment Team made the following recommendations:

1. That the Baccalaureate Degree Profile outcomes be reconfigured in Blackboard to allow instructors to align each assignment to individual outcome traits. Chris Sochor, Instructional Designer in Online Learning, said that it is possible to do this. The rationale for this recommendation is that it will focus instructors more closely on the specific elements (and definitions) of each outcome. Aligning to traits rather than holistically to an outcome should reduce the number of artifacts that assessors judge to lack specific outcome trait alignment.
2. That faculty be reminded to have students upload *final* versions of *summative* assignments for assessment.
3. That we use Microsoft Teams (rather than Blackboard Organizations) to communicate general education assessment information to specific constituencies. A special emphasis during 2020-2021 will be to communicate with faculty the need to align assignments to outcome traits. We will include the definitions of all outcome traits.

4. If recommendations 1 and 3 are not accomplished, consider having the Summer Assessment Team review all assignments that will be part of its reviews before beginning to score artifacts to determine the appropriateness of these assignments to each outcome trait.
5. That we communicate the results of general education assessment and recommendations of the Summer Assessment Team to the General Education Council.
6. That we examine the mapping of degree program outcomes to those of Marshall's Baccalaureate Degree Profile (BDP). These data are currently being collected in Taskstream and the Office of Assessment and Quality Initiatives will analyze the mappings completed to date and continue to work with degree programs that have not completed the mappings.
7. Use the analysis from recommendation 6 to recommend possible modifications to BDP traits.