Comparative Analysis Report for:

Delaware Technical Community College

Academic Level: Associate
Sample Size(s): 44 Outbound Exams

Prepared By:

Peregrine Academic Services, LLC

P.O. Box 741

Gillette WY 82717-0741

Phone (307) 685-1555

Please direct questions to support@peregrineacademics.com

Table of Contents

Understanding and Using the Interpretive Report

The purpose of the following analyses is to assist academic program managers and assessment coordinators with program-level direct assessment of the College/University business programs. These data should be used to assess the strengths and opportunities for improvement associated with the business academic programs based upon the knowledge levels of the students regarding the foundational learning outcomes of the business degree curriculum.

An Inbound Exam/Outbound Exam testing construct provides data for internal benchmarking. The inbound exam evaluates the student's knowledge level towards the beginning of the student's program of study. The outbound exam assesses the student's knowledge level at the end of the student's program of study. The difference in results between the inbound and outbound exams is the direct measure of learning for internal benchmarking.

Outbound exam results are relative. Outbound exam relevancy is understood best in terms of the change in knowledge level from the time a student enters the program compared to when they graduate from the program.

If identified, cohort level analyses provides program administrators with comparative information based upon the student cohort groups that the school has identified. Side-by-side comparisons are shown in this report to assist program managers with program-level analysis.

External comparisons of outbound scores with the aggregate data pool should only be used as a relative index of how the assessed program compares with other programs. There is a high degree of variability between business schools with respect to specific curriculums and areas of emphasis or concentrations. Comparisons include other schools with relatively similar student populations and educational delivery means, not necessarily based on the exact curriculum of the business program (which would be nearly impossible and most likely unrealistic).

Tips, Techniques, and Suggestions for Applying the Results of this Report for Academic Program-level Analysis and Continuous Improvement

The following tips, techniques, and suggestions for understanding and applying the results presented in this report for academic program-level analysis and continuous improvement are based on our years of experience in working with our client institutions, meeting with academic officials to review the results, and lessons learned from the accreditation institutions.

Reviewing the Results

- Topic and sub-topic level scores tend to be more significant in terms of analysis value than the total score. Although most exams include all 12 topics, not all exams will include all 12 topics. Therefore, the total score comparisons are shown for relative benchmarking whereas the topic and sub-topic level score comparison will tend to be more meaningful.
- If there are topics included on the exam that do not appear to be directly related to your curriculum and/or learning outcomes, consider removing these topics from future testing. It is generally best not to test on topics that are not included in the program's curriculum.
- We have a separate document available that includes the aggregate pool summary data that is used for comparison analysis purposes. If you would like to use these data for your own analysis, we can send this file to you.
- Consider the sample size for the exam period before making changes in the program based on the exam results. Lower sample sizes tend to have higher standard deviations. In general, it is best to have a sample of at least 100 exams before the results can be used for program changes. Since report period is a variable, we can go back and include past exam results for future reporting in order to get the sample size high enough for meaningful analysis.

Learning Outcome Analysis

- To evaluate the institution's learning outcomes, consider the table shown for each topic the frequency of questions missed (and correct). These data are most useful when considering learning outcome.
- Not every subject included on the exam will directly correspond to a program's learning outcome because this is a standardized test meant to apply to the widest diversity of programs. Therefore, the score for the topic or subtopic must be taking in the context of the subject-level analysis. For example, a relatively low topic/sub-topic score may be acceptable provided that the subject-level scores are high for those subjects that are directly related to learning outcomes. Conversely, a high topic/sub-topic score may be unacceptable if the questions missed on the exam were high for key learning outcomes.

Continuous Improvement

- It is important not to make too many changes in a program at the same time based on one or two exam periods. Instead,

it it generally better to make small incremental changes to the program based on these results and then monitor the results to assess the consequences of the change effort.

- Specific ideas for continuous improvement include:
    - Updating course content to include more case study type instruction that combines CPC topics in the same analysis.
    - Including a review of key business topics towards the end of the program (e. g. in the CAPSTONE course) that includes an application exercise that requires a review and understanding of all the CPC topics included within the program.

Interpreting and Using the Exam Scores

Inbound exam results are obtained from incoming students who have not yet completed their advance program of study. Cumulative inbound exam results are only used relative to the cumulative outbound results to directly measure academic learning. Individual student results from inbound exams (provided in a separate file) can be used to help guide, advise, and place a student within a program of study; however, individual results should generally not be used for academic grading purposes other than perhaps extra credit (or some other incentive) to complete the exam.

Outbound exam results are a direct measure of academic learning since the students taking the outbound exams have completed or nearly completed the degree program.

Outbound exam results, both cumulatively and individually DO NOT correspond directly to a traditional academic grading scale. The exam is relative to only to the inbound results as well as the external aggregate comparisons. Therefore, academic grading of a student's outbound results as well as interpreting cumulative outbound exam results should be done only on a relative scale as opposed to a traditional academic grading scale.

To encourage students to do their best with the outbound exams, an incentive is usually needed. Exam incentives include a direct grade, grading for extra credit if the result is above a certain threshold, or credit for a future assignment/activity within a course. In general, using an extra credit or credit in lieu of a future assignment is the best approach.

The following table shows an approximate relationship between the CPC-Based COMP exam results and relative student performance based upon competency level.

CPC-Based COMP Exam Score	Relative Interpretation of Student Competency
80-100%	Very High
70-79%	High
60-69%	Above Average
40-59%	Average
30-39%	Below Average
20-29%	Low
0-19%	Very Low

If specific academic credit (grade and points) are to be awarded to students based on their exam results, the table to the left could be used to assign letter grades, extra credit, and/or course points, assuming that the exam is included within a course.

Abandoned exams are not included in the data set for this report.

Glossary of Terms

Abandoned Exam. An exam that had the 48 hour time limit elapse. These exams are auto-completed, giving the student a score of "0" for each unanswered question. These exams are only included in the school's raw data, not in the reporting or analysis.

Academic Level. The academic degree level of the program: associates, bachelors, masters, and doctoral.

Aggregate Pools. The aggregate pool is the data set used for external benchmarking and comparisons and is based on the results from accredited institutions. The various aggregate pools are defined as follows:

Pools Based on Program Delivery Modality

1. **Traditional**. The majority of the program is delivered at a campus location at an established college or university. The majority of the students are recent high school graduates, typically 18-22 years old. Business courses are taught on a semester or quarter basis, typically Monday through Friday.
2. **Online**. The majority of the program is delivered online to students and there is little, if any, requirement for the students to go to a campus location any time during their college or university experience. The majority of the students are considered non-traditional, meaning they tend to be older, may have some college credit prior to starting their program, and are often working adults completing their degree program.
3. **Blended**. The program is delivered to students using a combination of online and campus-based instruction and/or the program is delivered in an accelerated format. The course term is typically 4 to 8 weeks. Campus-based instruction tends to be either at night or on weekends with generally longer sessions. The student population tends to be non-traditional, meaning they tend to be older, may have some college credit prior to starting their program, and are often working adults completing their degree program.

Pools Based on Location

1. **Outside-US**. Includes colleges and universities outside of the United States. Program delivery is usually campus-based; however, the aggregate pool includes some blended programs and online programs.
2. **Regional/Country**. Includes colleges and universities outside of the United States from specific regions (e.g. Latin America, Europe, Asia, etc.) or from specific countries (e.g. Mongolia). Program delivery is primarily campus-based; however, the pools may include some blended and online course delivery.
3. **US**. Includes all US-based schools and programs.

Pools Based on Institute Characteristics

1. **Large Private**. This aggregate pool includes large, privately owned universities within the United States.

2. **HBCU**. Includes colleges and university that are designated as Historically Black Colleges and Universities.
3. **Private**. US schools that are privately owned.
4. **Public**. US schools that are publically owned.
5. **Faith-based**. US schools that have a specific religious affiliation or association.

Masters-level Pools Based on Degree Type

1. **Masters-MBA**. Includes programs that are designed as Masters of Business Administration.
2. **Masters-MS**. Includes programs that are designed as Masters of Science.
3. **Masters-MA**. Includes programs that are designed as Masters of Arts.

Pools Based on Dual-Accreditation Affiliation

1. **IACBE**. Includes business schools and programs affiliated with the International Assembly for Collegiate Business Education. Where available, this pool is further divided by IACBE Region.
2. **ACBSP**. Includes business schools and programs affiliated with the Accreditation Council of Business Schools and Programs. Where available, this pool is further divided by ACBSP Region.

Assessment Period. The date range for the report, which includes all the exams administered within these dates. For synchronous schools, the assessment period is generally based upon the semester or quarter. For asynchronous schools, the assessment period is generally annual, semi-annual, or quarterly. School officials determine the assessment period.

Cohort. A group of students based upon a demographic factor such as degree program, course delivery modality, campus location, program start date, etc. We provide cohort-level analysis based upon one (1) cohort category that you identify at the start of the exam cycle.

Common Professional Component (CPC). As defined by the business degree accreditation bodies, the Common Professional Component (CPC) includes the following business topics:

1. Accounting
2. Business Ethics
3. Business Finance
4. Business Integration and Strategic Management
5. Business Leadership
6. Economics (Macro and Micro)
7. Global Dimensions of Business
8. Information Management Systems
9. Legal Environment of Business
10. Management (Operations/Production Management, Human Resource Management, and Organizational Behavior)
11. Marketing
12. Quantitative Techniques and Business Statistics

CPC-Based Comprehensive (COMP) Exam. An exam that includes all of the CPC topics to be assessed for a specified business program. Each CPC topic has 10 questions included within exam, randomly selected from a validated test bank that includes 300-500 exam questions. Inbound and outbound exams are generated from the same test bank of questions. Exam questions were developed based upon the foundational topic information included within introductory chapters of the leading textbooks associated with the topic and the academic degree level. A 12-topic exam includes 120 questions, 10 questions/topic.

External Benchmarking. Analyses performed by comparing the cumulative results from a school with a demographically similar aggregate data set.

Frequency of Questions Missed. For outbound exams, the frequency of questions missed is calculated for each subject within a CPC topic. The formula is: Number of Questions Missed / Number of Questions Offered) * 100. Data are also shown for Frequency of Questions Correct, which is the inverse of Questions Missed. In order to provide a relative index for understand these data, an average of questions missed/correct is shown for US-based and Outside US-based exams.

Inbound Exam. A student exam administered early in the student's program, usually during their first or second business course, that measures the student's knowledge level at the beginning of their academic program.

Internal Benchmarking. Analyses performed by comparing the inbound and outbound exam scores and/or by the analyses of the frequency of questions missed for each subject within a CPC topic.

Mean Completion Time. The average time, in minutes, to complete the exam. Mean completion time is also shown for each CPC topic. Mean completion times are usual when evaluating student effort, particularly with outbound exam results. If the outbound exams have a relatively low mean completion time, this may be an indication that the students are not putting forth their best effort. Additional incentives may be necessary to encourage better student performance (extra credit, points, letter grades, credit for future assignments, etc.).

Outbound Exam. A student exam administered at the end of the student's academic program, usually within their last course, that measures the student's knowledge level at the end of their academic program.

Percentage Change. The percentage change between two scores. For inbound/outbound testing, the percentage change is calculated using the following formula: *(Outbound Score / Inbound Score) - 1*.

Percentage Difference. The percentage difference between a school's outbound student results and the aggregate, calculated using the following formula: *Aggregate Score – School Score*.

Percent Change Comparison. The percent difference between the school's percent change between inbound and outbound exam results and the aggregate pool's percent change between inbound and outbound exam results. The percent change comparison represents a relative learning difference between the specific school and demographically similar schools.

Scatter Plot. A visual representation of the exam results for all students. The purpose of the scatter plot is to provide you with a visual reference for the ranges in results.

Subjects. For each CPC topic, questions are grouped using 4-8 subject areas. CPC subjects generally correspond to the school's learning outcomes associated with each CPC topic. In using these data, consider the Subject is the Learning Outcome without the verb.

Subtopic. For the CPCs of Economics and Management, there are identified subtopics. For the CPC topic of Economics, the subtopics are Macroeconomics and Microeconomics. For the CPC topic of Management, the subtopics are Operations/Production Management, Human Resource Management, and Organizational Behavior.

Summary Statistics. Includes the mean completion time, sample size, average score, standard deviation, and the min/max/median/mode scores.

Total Exam Score Significance. If a student simply randomly selected responses to questions, the statistical mean of the total score of such a randomly responded to exam would be approximately 30% (+/- 2.5% depending upon the number of questions on the exam). Therefore, exam scores above 30% could be considered significant in terms of measuring actual knowledge levels.

Internal Benchmarking

Delaware Technical & Community College

Academic Level: Associate

January - June 2013

Sample Size(s): 44 Outbound Exams

Internal Benchmarking

Internal benchmarking is conducted using a variety of statistical tools based upon outbound exam results with or without inbound exam results.

With inbound exam results, internal benchmarking includes a direct comparison (percentage change) between the student's inbound exam results with the student's outbound exam results. These results include cumulative result (the cumulative summary of all CPC topic assessed on the exam) as well as individual results on each of the CPC topics assessed with the exam.
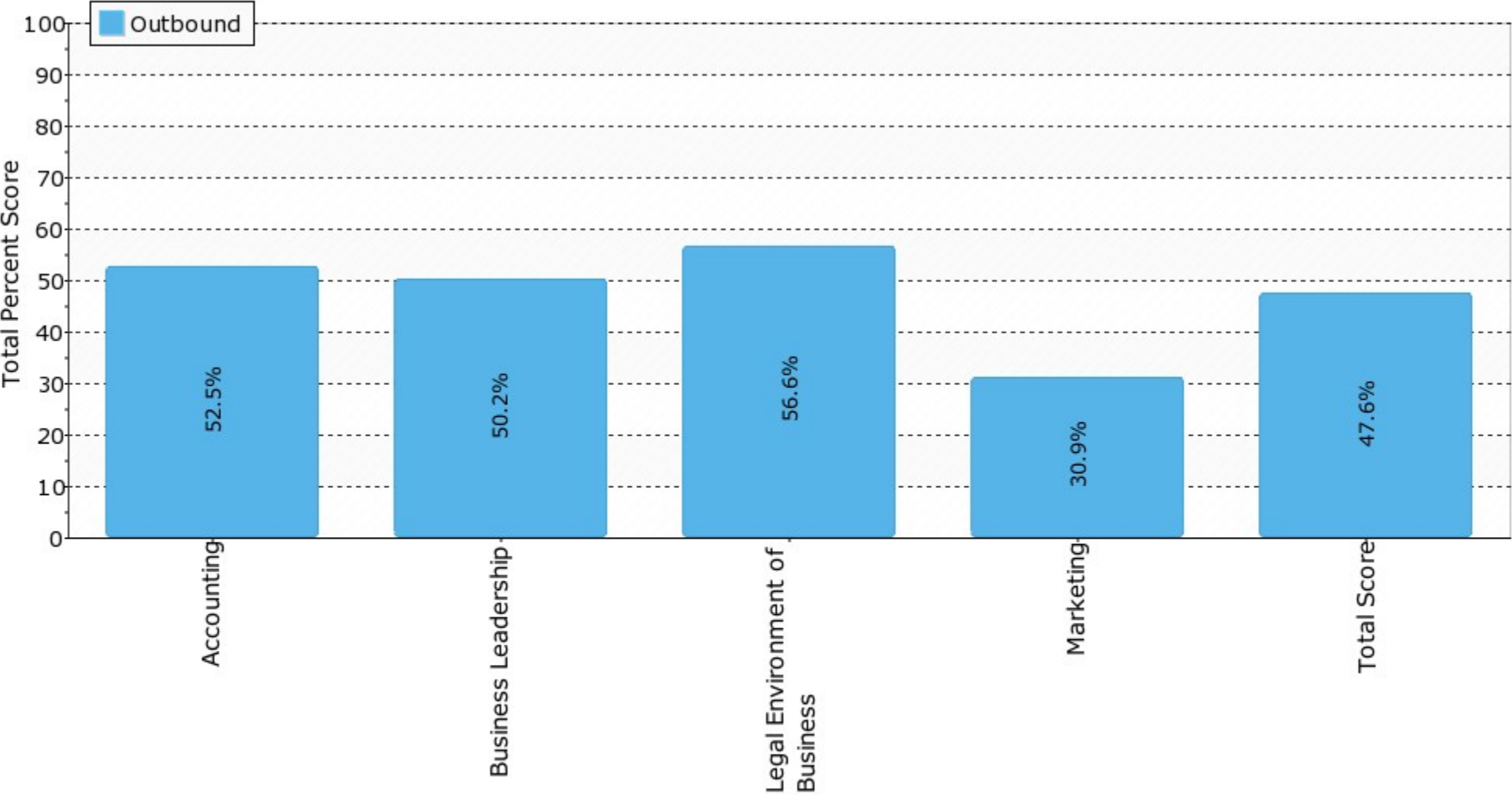
Internal benchmarking also includes scatter plots of exam results so that program managers can readily see how students performed on the exam.

The following table shows an approximate relationship between the CPC-Based COMP exam results and relative student performance based upon competency level.
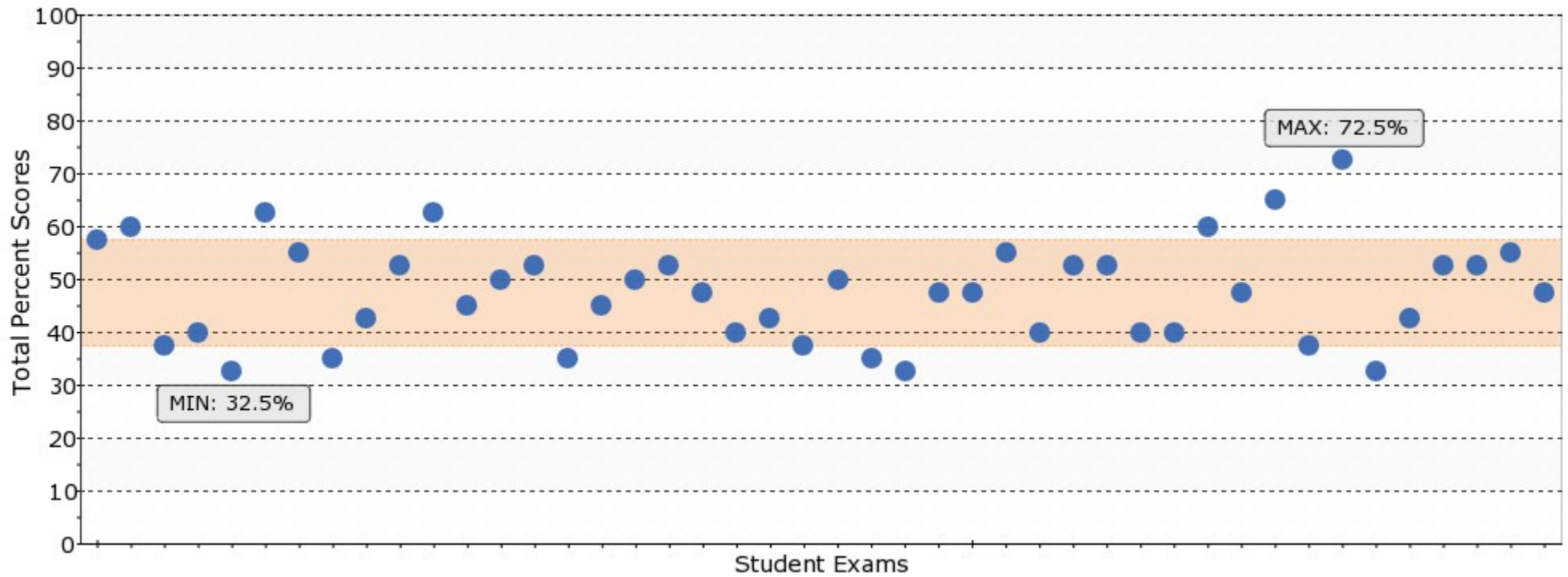
CPC-Based COMP Exam Score	Relative Interpretation of Student Competency
80-100%	Very High
70-79%	High
60-69%	Above Average
40-59%	Average
30-39%	Below Average
20-29%	Low
0-19%	Very Low

If specific academic credit (grade and points) are to be awarded to students based on their exam results, the table to the left could be used to assign letter grades, extra credit, and/or course points, assuming that the exam is included within a course.

Overview of Outbound Results

Bar chart titled "Overview of Outbound Results" showing Total Percent Score on the y-axis (0 to 100) and categories on the x-axis with the following Outbound values:

Category	Outbound
Accounting	52.5%
Business Leadership	50.2%
Legal Environment of Business	56.6%
Marketing	30.9%
Total Score	47.6%

Scatter Plot: Outbound Total Results

Sample Size: Outbound=44
Mean Completion Time (mins): Outbound=24.5
Mean Score: 47.6%, Max Score: 72.5%, Min Score: 32.5%
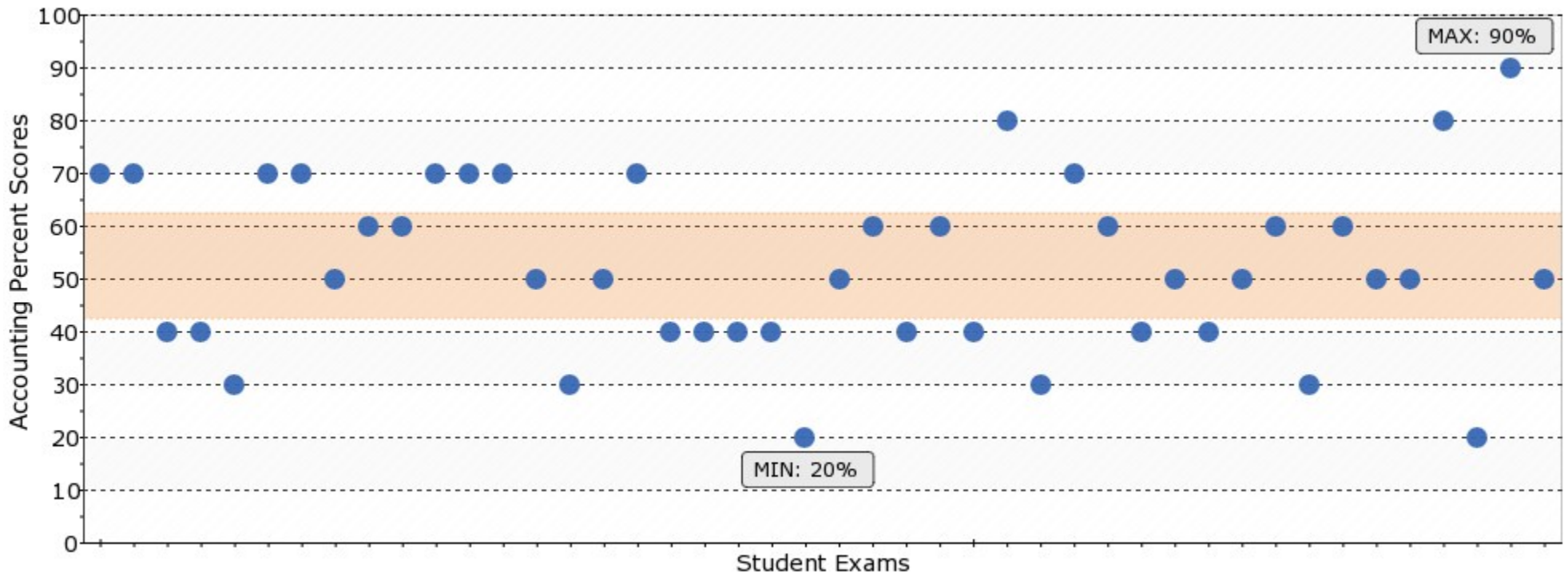
Accounting Assessment Summary

Assessment Summary Statistics

Accounting	Outbound
Sample Size	44
Average Score	52.5 %
Standard Deviation	16.58
Min Score	20 %
Max Score	90 %
Median Score	50 %
Mode	40 %

Frequency of Questions Offered on Outbound Exams

Accounting	Results For This Report			Aggregate Pool Averages		
	Number of Questions Offered	Frequency Missed	Frequency Correct	Number of Questions Offered	Frequency Missed	Frequency Correct
Accounting Data Analysis	108	51.85 %	48.15 %	7,636	51.24 %	48.76 %
Balance Sheet Analysis	27	44.44 %	55.56 %	1,900	58.21 %	41.79 %
Compliance in Accounting	25	44.00 %	56.00 %	1,355	45.83 %	54.17 %
Dividends, Stocks, and Bonds	27	37.04 %	62.96 %	1,521	46.29 %	53.71 %
Financial Statement Analysis	31	51.61 %	48.39 %	1,604	54.99 %	45.01 %
Interest, Income, and Debt	20	55.00 %	45.00 %	1,324	58.31 %	41.69 %
Journal Entries	169	47.34 %	52.66 %	10,006	54.41 %	45.59 %
Management of Accounting	33	39.39 %	60.61 %	2,664	44.48 %	55.52 %

Outbound Exam Accounting Result

Sample Size: Outbound=44
Mean Completion Time (mins): Outbound=24.5
Mean Score: 52.5%, Max Score: 90%, Min Score: 20%
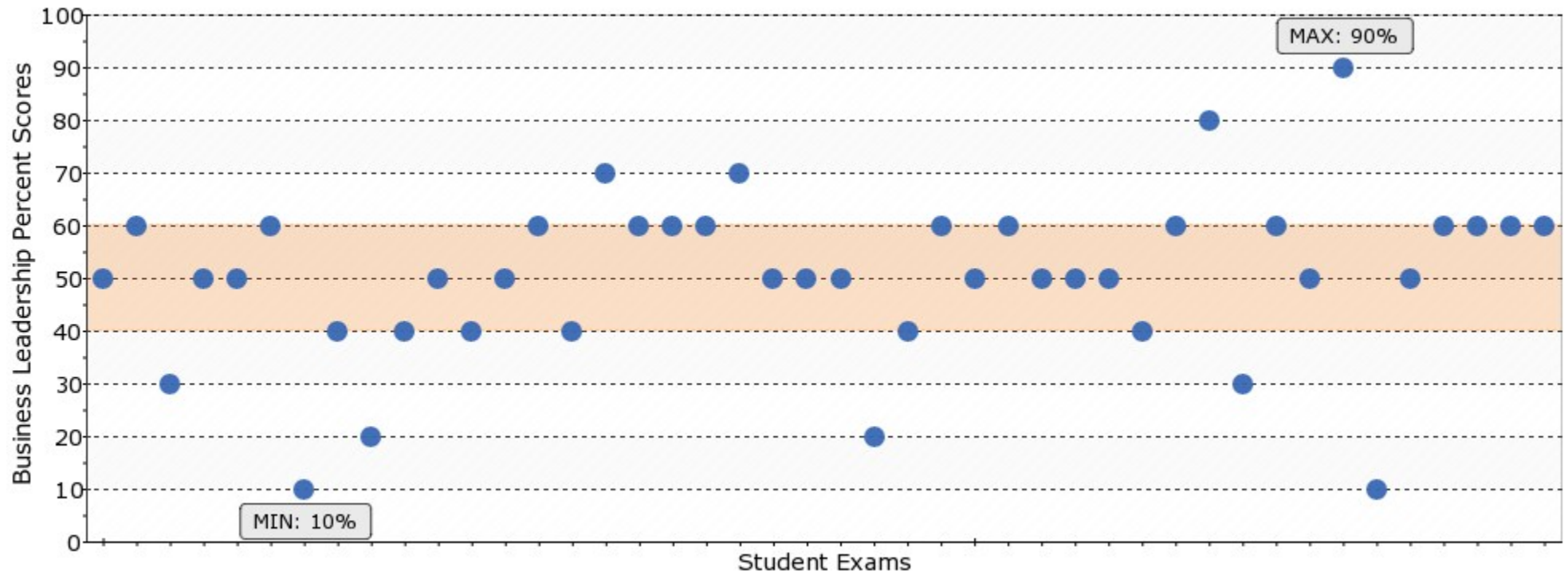
Business Leadership Assessment Summary

Assessment Summary Statistics

Business Leadership	Outbound
Sample Size	44
Average Score	50.23 %
Standard Deviation	16.07
Min Score	10 %
Max Score	90 %
Median Score	50 %
Mode	60 %

Frequency of Questions Offered on Outbound Exams

Business Leadership	Results For This Report			Aggregate Pool Averages		
	Number of Questions Offered	Frequency Missed	Frequency Correct	Number of Questions Offered	Frequency Missed	Frequency Correct
Assessing Leadership Styles	35	51.43 %	48.57 %	121	44.63 %	55.37 %
Building and Leading Teams	17	23.53 %	76.47 %	37	32.43 %	67.57 %
Control and Types of Leader Power	17	52.94 %	47.06 %	46	52.17 %	47.83 %
Employee Development	26	53.85 %	46.15 %	44	56.82 %	43.18 %
Employee Motivation and Rewards	176	52.84 %	47.16 %	423	49.65 %	50.35 %
Leader Expectations	12	41.67 %	58.33 %	35	34.29 %	65.71 %
Leader Traits and Attributes	67	38.81 %	61.19 %	183	43.17 %	56.83 %
Models of Leadership	90	55.56 %	44.44 %	191	52.88 %	47.12 %

Outbound Exam Business Leadership Result

Sample Size: Outbound=44
Mean Completion Time (mins): Outbound=24.5
Mean Score: 50.2%, Max Score: 90%, Min Score: 10%
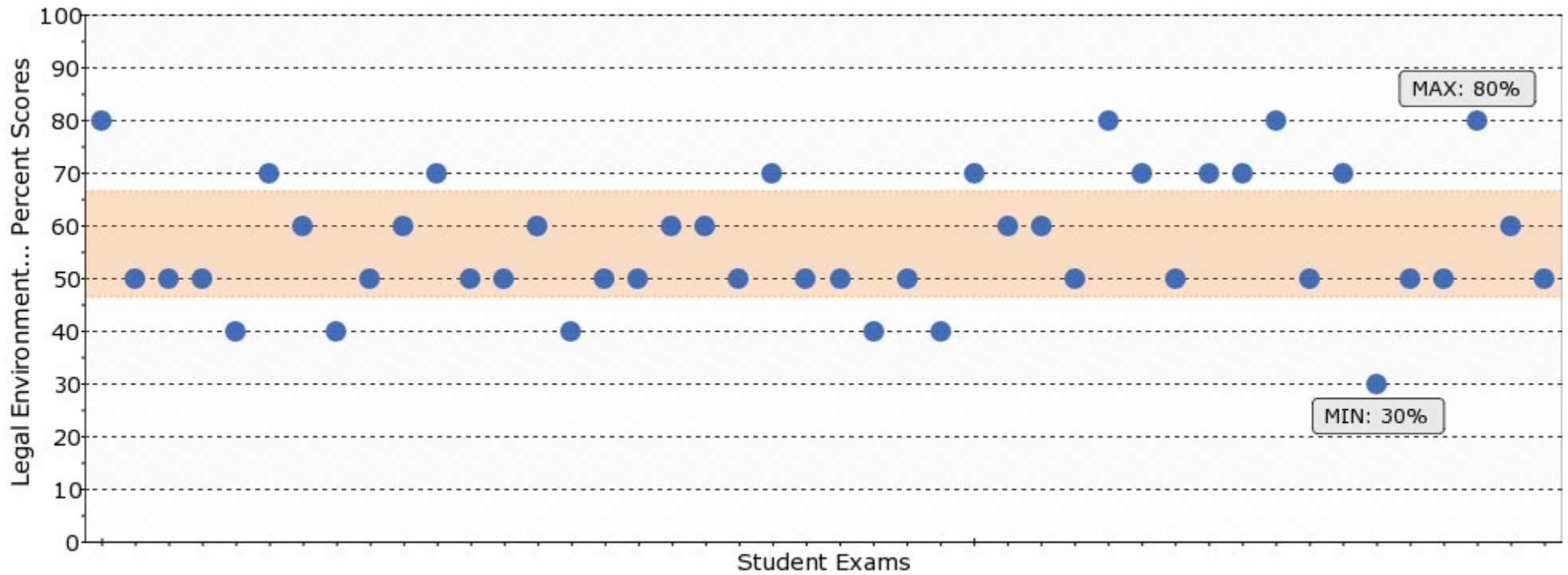
Legal Environment of Business Assessment Summary

Assessment Summary Statistics

Legal Environment of Business	Outbound
Sample Size	44
Average Score	56.59 %
Standard Deviation	12.38
Min Score	30 %
Max Score	80 %
Median Score	50 %
Mode	50 %

Frequency of Questions Offered on Outbound Exams

Legal Environment of Business	Results For This Report			Aggregate Pool Averages		
	Number of Questions Offered	Frequency Missed	Frequency Correct	Number of Questions Offered	Frequency Missed	Frequency Correct
Antitrust	58	43.10 %	56.90 %	1,257	51.55 %	48.45 %
Civil and Criminal Processes	57	59.65 %	40.35 %	1,320	54.77 %	45.23 %
Consumer Protection	57	38.60 %	61.40 %	1,482	42.24 %	57.76 %
Equal Employment Opportunity	15	46.67 %	53.33 %	307	36.81 %	63.19 %
Financial Regulation	30	60.00 %	40.00 %	377	54.64 %	45.36 %
Government Regulation of Businesses	112	45.54 %	54.46 %	2,413	49.56 %	50.44 %
Legal Agreements and Documents	69	28.99 %	71.01 %	1,457	42.35 %	57.65 %
Liability	4	25.00 %	75.00 %	313	45.37 %	54.63 %
Types of Business Organizations	38	34.21 %	65.79 %	784	48.72 %	51.28 %

Outbound Exam Legal Environment of Business Result

Sample Size: Outbound=44
Mean Completion Time (mins): Outbound=24.5
Mean Score: 56.6%, Max Score: 80%, Min Score: 30%

Marketing Assessment Summary

Assessment Summary Statistics

Marketing	Outbound
Sample Size	44
Average Score	30.91 %
Standard Deviation	19.15
Min Score	0 %
Max Score	80 %
Median Score	30 %
Mode	20 %

Frequency of Questions Offered on Outbound Exams

Marketing	Results For This Report			Aggregate Pool Averages		
	Number of Questions Offered	Frequency Missed	Frequency Correct	Number of Questions Offered	Frequency Missed	Frequency Correct
Marketing Research, Planning, and Strategy	114	70.18 %	29.82 %	6,981	71.06 %	28.94 %
People	34	64.71 %	35.29 %	1,634	62.67 %	37.33 %
Place	23	82.61 %	17.39 %	1,099	72.98 %	27.02 %
Price	142	69.72 %	30.28 %	8,824	63.47 %	36.53 %
Product	100	66.00 %	34.00 %	6,622	64.42 %	35.58 %
Promotion	27	66.67 %	33.33 %	1,730	73.93 %	26.07 %

Outbound Exam Marketing Result
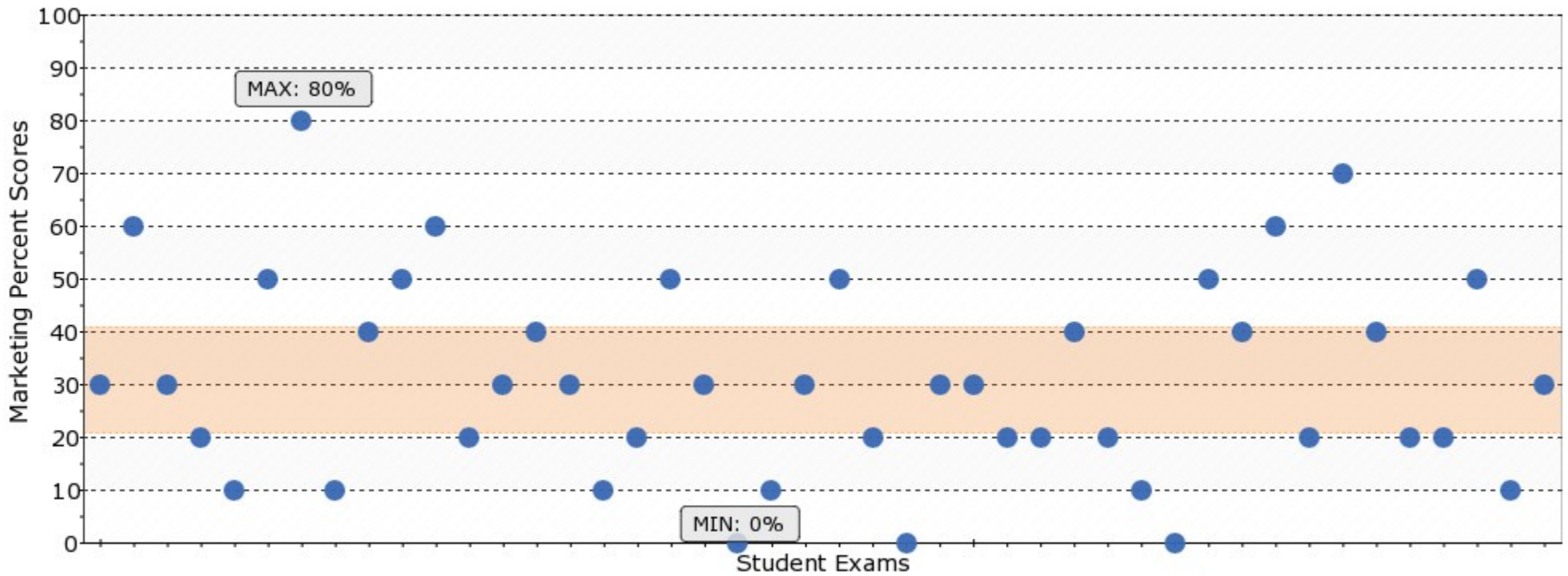
Sample Size: Outbound=44
Mean Completion Time (mins): Outbound=24.5
Mean Score: 30.9%, Max Score: 80%, Min Score: 0%

External Benchmarking

Delaware Technical & Community College

Academic Level: Associate

January - June 2013

Sample Size(s): 44 Outbound Exams

External Benchmarking

External benchmarking is conducted using a variety of statistical tools based upon outbound exam results with or without inbound exam results.

When inbound testing has been conducted by the school, external benchmarking includes the percent difference between the school's and the aggregate's percent change based upon the inbound exam results and the outbound exam results. These graphs and data provide a relative indication of the change in the student's knowledge level compared to the changes observed with other demographically similar institutions.

If inbound exams are not included in the assessment program, then the school's results are only compared with the aggregate outbound results using demographically similar schools and programs.
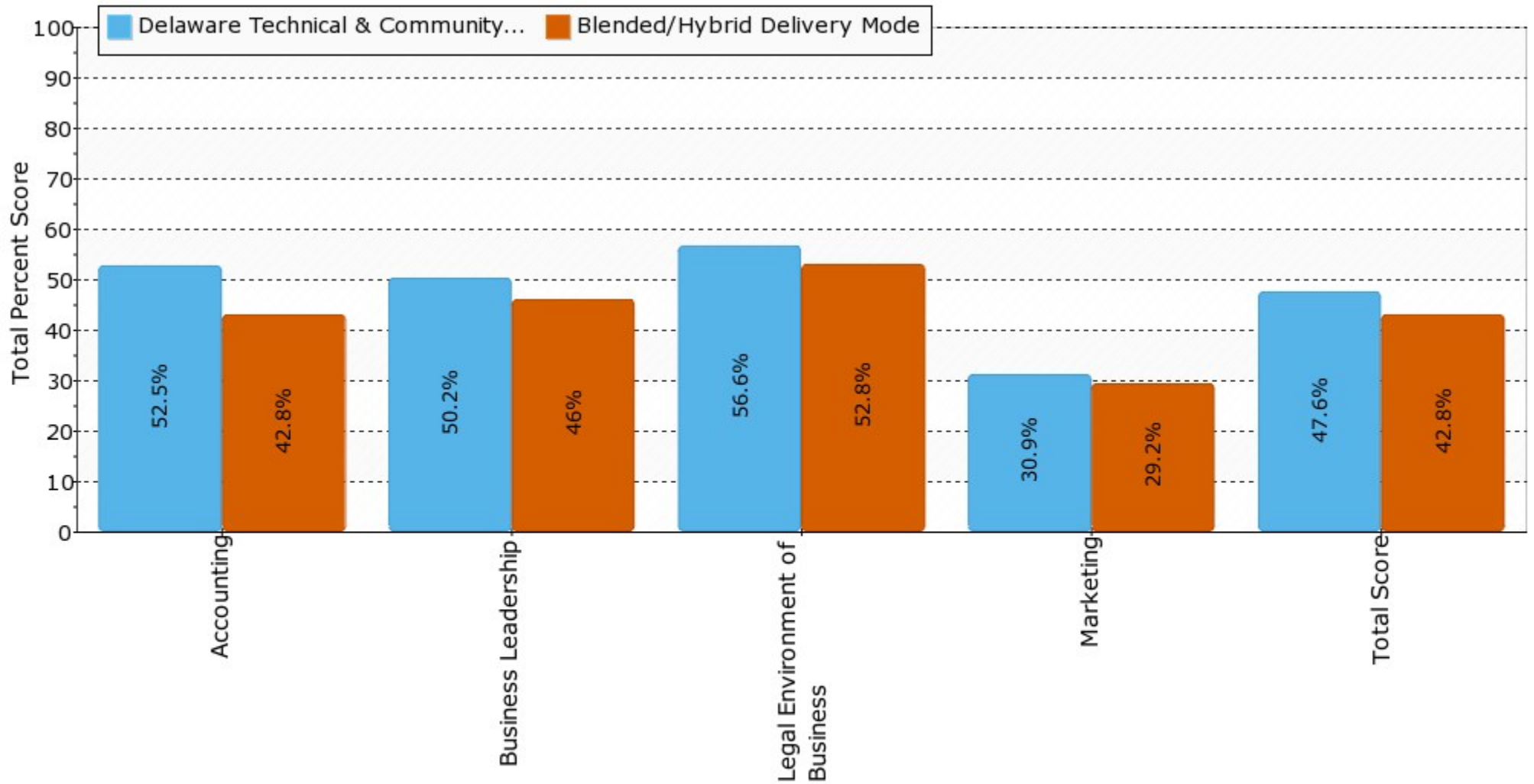
The aggregate pool using demographically similar schools and programs is based upon delivery modality (on-campus, blended/hybrid, and online program) and academic degree level (associates, bachelors, masters, and doctoral). Additionally, we distinguish between US schools and non-US schools. For non-US schools, we use an international version of our CPC-based COMP exam. Although there is some overlap in questions, the international exam is focused on international business areas and does not include US-centric exam questions.

Since CPC-based COMP exam results do not equate directly to a traditional higher education grading scale, program managers should use the following table as a relative index for overall performance.
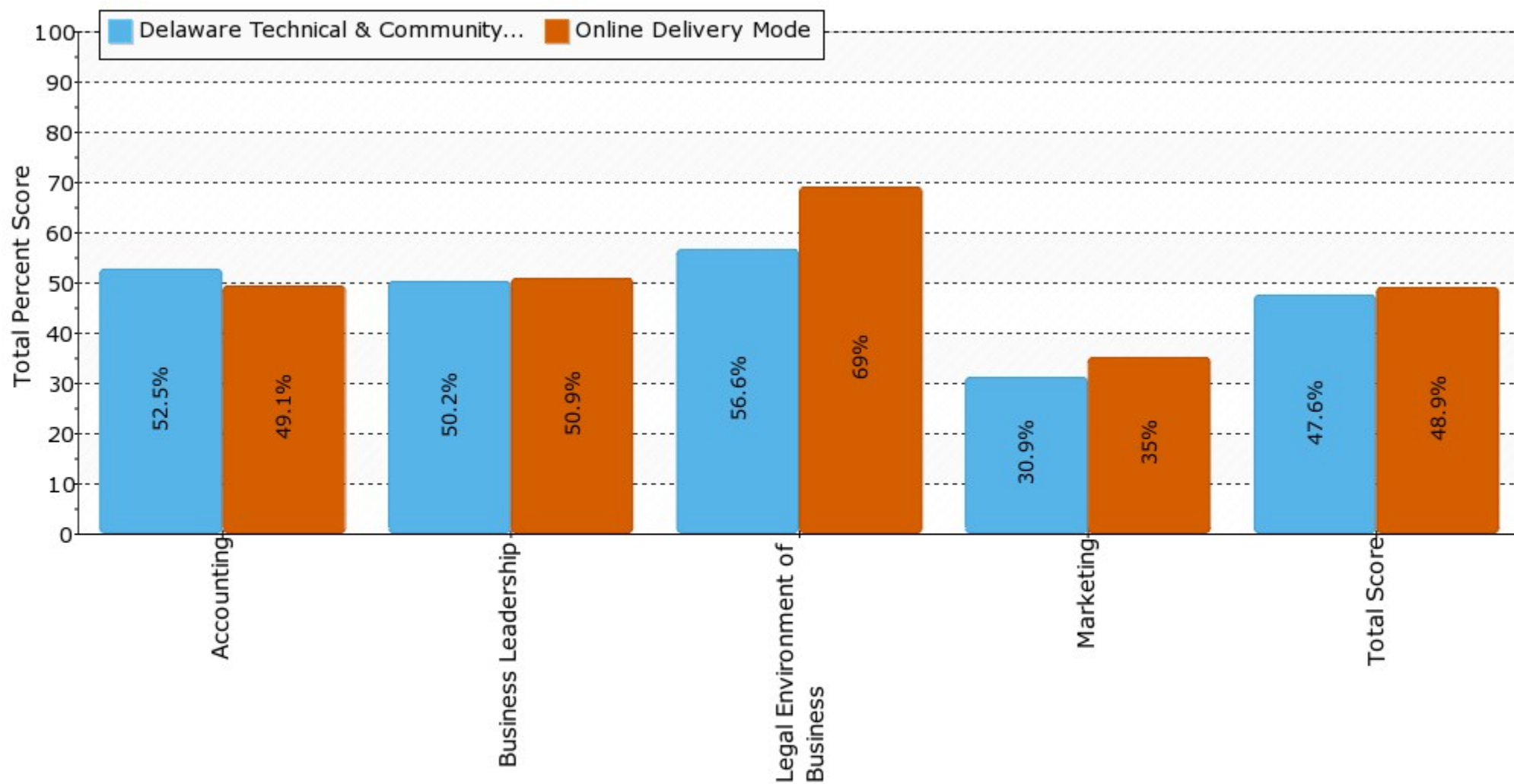
CPC-Based COMP Exam Score	Relative Interpretation of Student Competency
80-100%	Very High
70-79%	High
60-69%	Above Average
40-59%	Average
30-39%	Below Average
20-29%	Low
0-19%	Very Low

If specific academic credit (grade and points) are to be awarded to students based on their exam results, the table to the left could be used to assign letter grades, extra credit, and/or course points, assuming that the exam is included within a course.
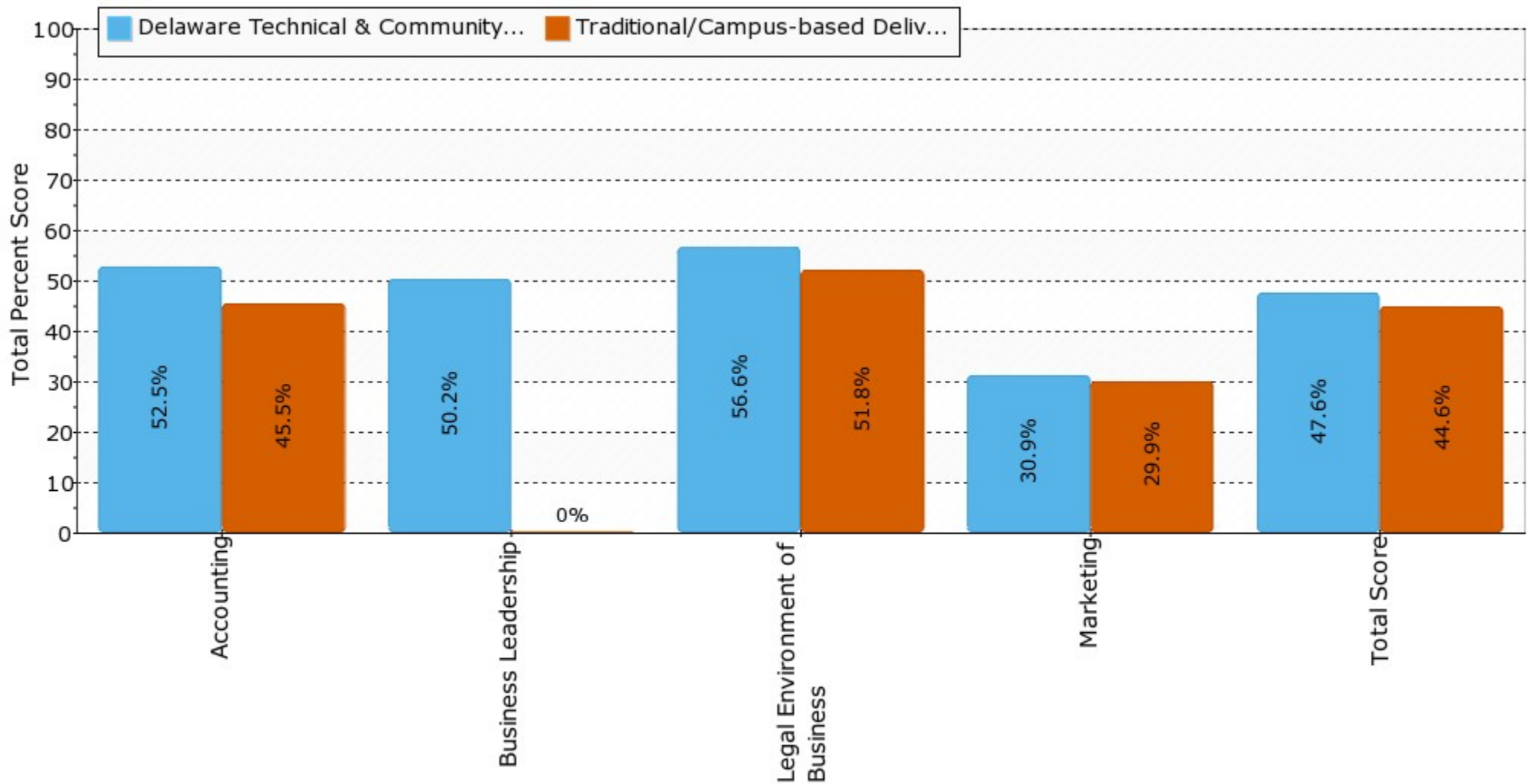
Overview: Outbound Exam Results Compared to the Aggregate Pool for Blended/Hybrid Delivery Mode Programs

Chart legend: Delaware Technical & Community... (blue), Blended/Hybrid Delivery Mode (orange)

Y-axis: Total Percent Score (0–100)

Category	Delaware Technical & Community...	Blended/Hybrid Delivery Mode
Accounting	52.5%	42.8%
Business Leadership	50.2%	46%
Legal Environment of Business	56.6%	52.8%
Marketing	30.9%	29.2%
Total Score	47.6%	42.8%

Overview: Outbound Exam Results Compared to the Aggregate Pool for [Online Delivery Mode](#) Programs

Legend: ■ Delaware Technical & Community... ■ Online Delivery Mode

Category	Delaware Technical & Community	Online Delivery Mode
Accounting	52.5%	49.1%
Business Leadership	50.2%	50.9%
Legal Environment of Business	56.6%	69%
Marketing	30.9%	35%
Total Score	47.6%	48.9%

Overview: Outbound Exam Results Compared to the Aggregate Pool for [Traditional/Campus-based Deliv...](#) Programs

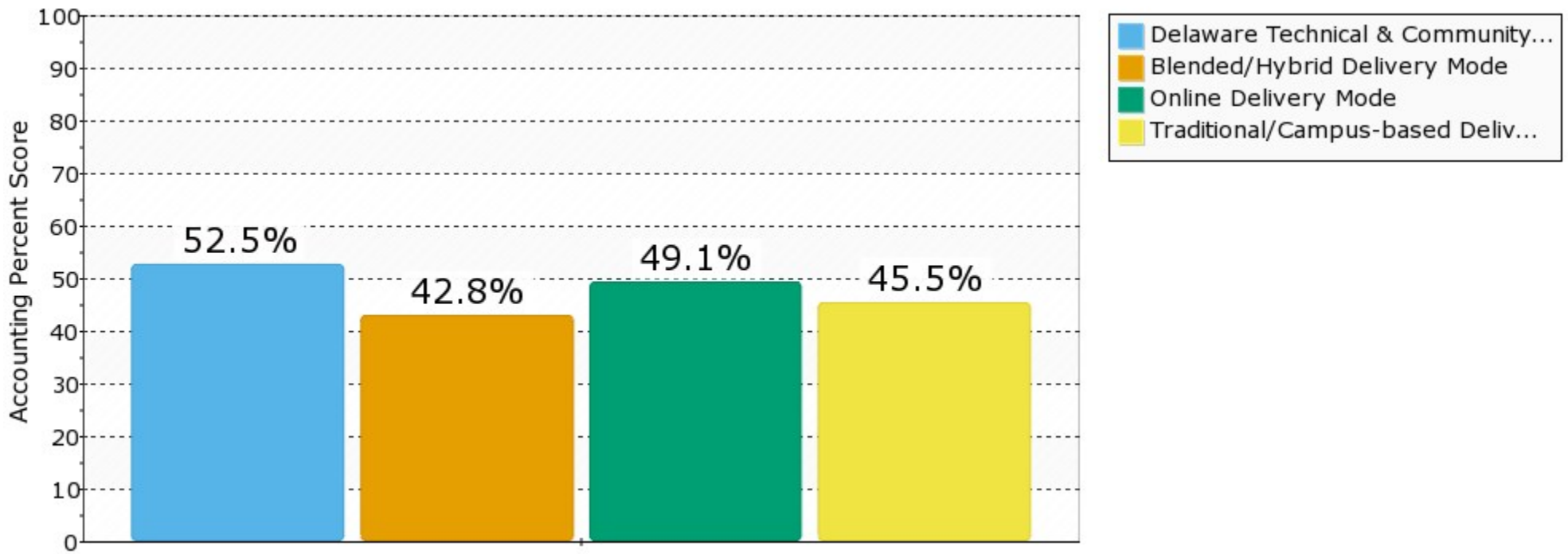# Outbound Exam Total Results Compared to the Different Aggregate Pools
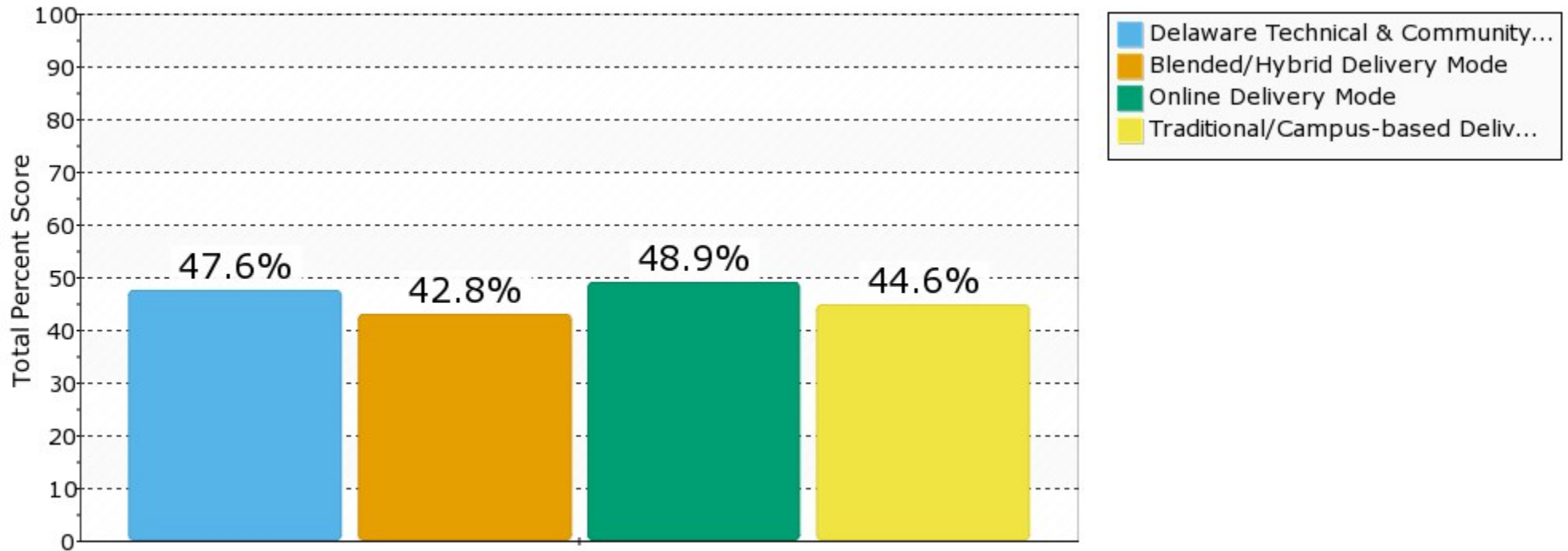
4.8% Difference with the Blended/Hybrid Delivery Mode Aggregate

1.4% Difference with the Online Delivery Mode Aggregate

3% Difference with the Traditional/Campus-based Deliv... Aggregate

Comparison of Outbound Results with Outbound Aggregate Results:
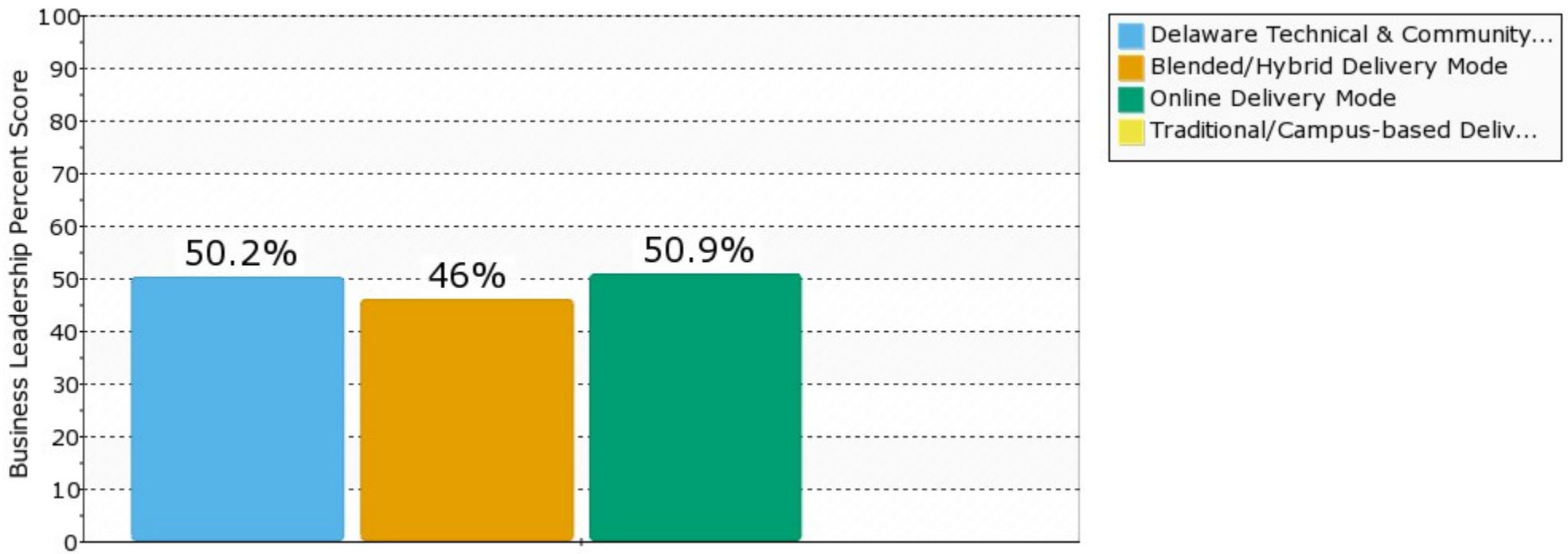## Accounting

9.7% Difference with the Blended/Hybrid Delivery Mode Aggregate

3.4% Difference with the Online Delivery Mode Aggregate

7.1% Difference with the Traditional/Campus-based Deliv... Aggregate

Comparison of Outbound Results with Outbound Aggregate Results:
Business Leadership

4.2% Difference with the Blended/Hybrid Delivery Mode Aggregate

0.6% Difference with the Online Delivery Mode Aggregate

50.2% Difference with the Traditional/Campus-based Deliv... Aggregate

Comparison of Outbound Results with Outbound Aggregate Results:
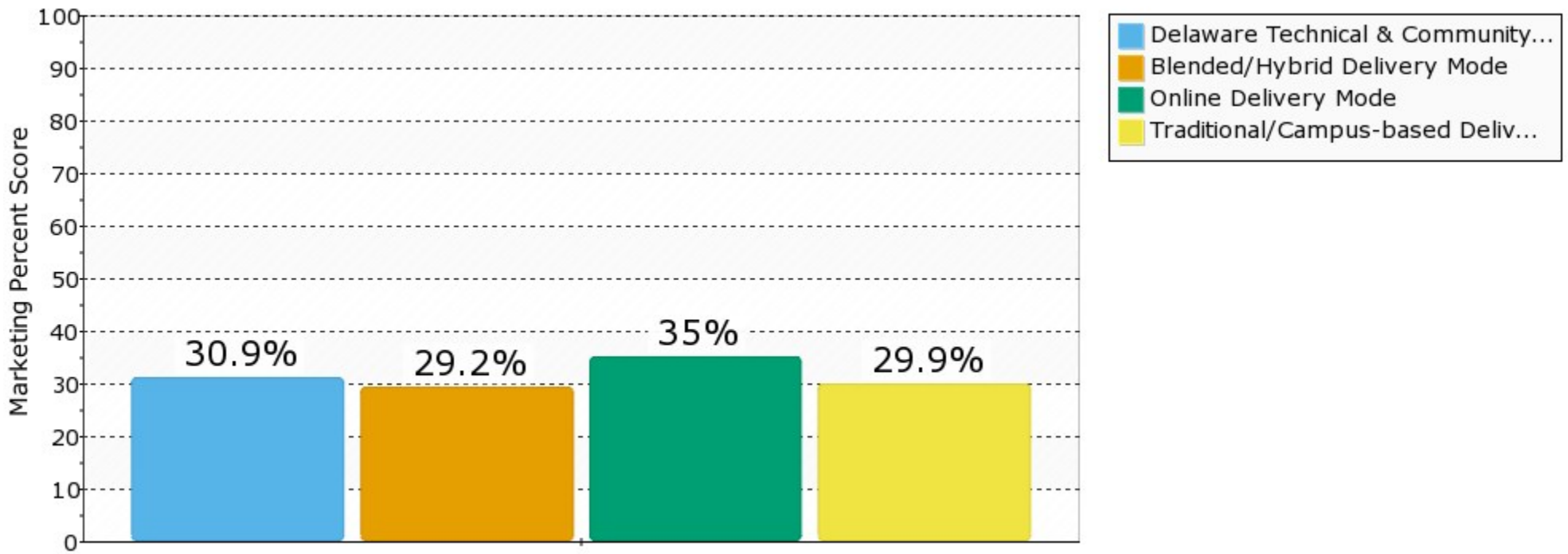## Legal Environment of Business

3.8% Difference with the Blended/Hybrid Delivery Mode Aggregate

12.4% Difference with the Online Delivery Mode Aggregate

4.8% Difference with the Traditional/Campus-based Deliv... Aggregate

Comparison of Outbound Results with Outbound Aggregate Results:
Marketing

Legend:
- Delaware Technical & Community...
- Blended/Hybrid Delivery Mode
- Online Delivery Mode
- Traditional/Campus-based Deliv...

Y-axis: Marketing Percent Score (0–100)

Bar values:
- 30.9%
- 29.2%
- 35%
- 29.9%

1.7% Difference with the Blended/Hybrid Delivery Mode Aggregate

4.1% Difference with the Online Delivery Mode Aggregate

1% Difference with the Traditional/Campus-based Deliv... Aggregate