# 2014-15 Annual Assessment Summary Report 

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## Executive Summary

The Office of Assessment and Reporting, with the administrative assistance of the University's Test Center, coordinates several student learning outcomes assessments annually. The purpose of administering many nationally-normed instruments is to measure the amount of learning that takes place during the MVNU experience for general education and content. The student outcomes testing program involves three groups of students. [1] Students entering the traditional undergraduate program complete one of three (3) general education assessments during the New Student Institute (NSI) activities. [2] These pretests serve as baselines for determining the growth or change occurring between entry and the junior year, when they complete these same instruments again in a posttest setting. [3] End-of-program assessments employ multiple evaluation methodologies. When nationally developed instruments do not exist for specific disciplines or if the department determines that the national instruments do not align well with the department's curriculum, departments have developed local instruments, which they and/or the Test Center personnel administer during the spring semester of the senior year.

Other departments utilize nationally developed and normed instruments for assessing the students' mastery of disciplinary content and/or skills. Some employ one of the Area Concentration Achievement Tests (ACAT) series from PACAT, Inc. of Clarksville, Tennessee (http://www.collegeoutcomes.com). Others rely on the Major Field Test (MFT) series from Educational Testing Service (http://www.ets.org), and business tests from Ivy Software (http://www.ivysoftware.com/\#tests). As a general rule, the practice has been to recommend that each department establish performance targets or benchmarks at the $50^{\text {th }}$ percentile or national average as the minimum measure of effective departmental performance, given that on admission tests MVNU's entering students generally score at or slightly above national college-bound norms.

Mount Vernon Nazarene University first-time freshmen are competitive with their peers outside the University, and are competitive with their peers when they graduate at the end of four years. There is significant growth from the freshmen year to the junior year in general education, and MVNU juniors improve their rank with comparison groups during that period of time. For those end-of-program assessments that have national norms, there is no discernible pattern of overall performance; there is significant variation between individuals, between cohorts from year to year, and variation between MVNU programs.

## General Education Assessments

The University administers three (3) primary instruments to assess its general education outcomes. Over time, the Student Assessment and Learning Committee developed a structure for the assessment that provides information about change or growth in individuals through a pretest-posttest design. At NSI activities, the entering class of students (first-time freshmen and transfer students) are split randomly into three groups, each of which tests on one of the following instruments to provide baseline information related to individuals and the entering cohort. At the end of the junior year, the students are then retested on the same instruments, and the results are analyzed to determine the growth of individuals and change in average scores. Individual scores and cohort averages are provided as feedback to the pretest and posttest groups through a letter.

## Defining Issues Test (Entering Students)

The Defining Issues Test (version 2, DIT-2), developed and administered by the Center for the Study of Ethical Development at the University of Minnesota, presents information on the moral schemas students employ in moral decision-making. Three (3) general scores are reported along with more technical indices. [1] The personal interest schema score reflects the individual's focus on direct advantage to the actor, simple exchanges of favor for favor, the good or evil intentions of the parties, maintaining friendships and good relationships, and maintaining the approval of others. [2] The maintaining norms schema score is directed toward maintaining the existing legal system, maintaining existing roles, and formal organizational structure. [3] The post-conventional schema score focuses on organizing society by consensus, insisting on due process, safeguarding basic human rights, and appealing to ethical ideals. N 2 is a calculated score that prioritizes post-conventional schema and minimizes the weight given to simplistic thinking, theoretically presenting a more highly principled ethical decision-making capacity.

In fall 2014, during NSI activities, the DIT-2 was completed by 123 students entering the traditional undergraduate program; most were first-time freshmen with a small contingent of transfer students. The average scores are presented below with the national freshman averages.

|  | DIT-2 Scores |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Group | Personal Interest | Maintain Norms | Post-conventional | N2 |
| MVNU Freshman <br> Average | 24.4 | 38.9 | 30.2 | 28.0 |
| National Freshman <br> Average | 28.5 | 33.6 | 32.2 | 31.1 |

As a group MVNU's entering students are most likely to make their moral decisions by reference to maintaining group norms and less by either a sole concern for their own personal interests, or by employing more principled ethical schemas. This pattern is consistent across several years of entering students, and is likely to evidence the role of the faith community as a significant moral and ethical social force.

## Ethnocentrism (Entering Students)

For several years, the Ethnocentrism Scale has been administered to incoming freshmen and again to juniors. It is composed of 18 items of which 12 are positively worded and scored while 6 are negatively worded and reverse scored, measures a generalized tendency to "view . . . one's country . . . (as) the center of the universe," or to see and interpret those from other cultures and backgrounds through the lens of one's own cultural assumptions, preferences, and values. High scores indicate a generalized
prejudice against individuals with alternate ethnicity, orientation, or religiosity and portray some degree of favoritism for in-groups and stereotyping of out-groups, often negative.

The Ethnocentrism Scale was administered to one cohort of freshmen during the NSI. One hundred twenty three (123) participated in the assessment. The average score was 63.5 , which was slightly higher than the fall 2013 cohort (60.0). This indicates an overall elevated level of prejudice and tendency to think of others in one's one ethnic perspective.

## ETS Proficiency Profile (Entering Students)

One hundred twelve (112) entering students completed the ETS Proficiency Profile in fall 2014. The following table presents the national average scores, MVNU's entering student averages, and the percentile equivalents based on the entering freshmen, no hours completed, baccalaureate college norms covering July 2008 through June 2013.

|  | Skills Subscores |  |  |  |  | Context-based Subscores |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Critical <br> Thinking | Reading | Writing | Mathematics | Humanities | Social <br> Sciences | Natural <br> Sciences |
| National <br> Freshman <br> Average | 437.5 | 109.7 | 115.5 | 112.9 | 111.8 | 112.9 | 111.5 | 113.3 |
| MVNU <br> Freshman <br> Average | 437.1 | 109.6 | 114.8 | 113.0 | 113.0 | 113.4 | 110.6 | 112.8 |
| National <br> Freshman <br> Percentile <br> Equivalent | $54^{\text {th }}$ | $54^{\text {th }}$ | $44^{\text {th }}$ | $47^{\text {th }}$ | $59^{\text {th }}$ | $53^{\text {rd }}$ | $49^{\text {th }}$ | $46^{\text {th }}$ |

Overall, the MVNU entering students in fall 2014 were similar in ability to their peers in the Baccalaureate (Liberal Arts) Colleges I and II classification that constitutes the University's comparison group. They performed slightly below peers nationally on the total score and on four (4) of the subscores. The fall 2014 entering cohort did not perform as well as their MVNU peers entering in fall 2013 (total score 442.9). Generally, MVNU's scores (entering ACT and Proficiency Profile) remain stable across time.

## Test of Bible Knowledge (Entering Students)

One hundred eighteen (118) traditional students completed the Test of Bible Knowledge during NSI activities as a pretest in fall 2014. As juniors the same students will complete the test as a posttest. The pretest and posttest scores give the University significant information on the degree of growth in Bible knowledge that students demonstrate during the MVNU educational experience. The following table summarizes the 2014 entering class profile on the Test of Bible Knowledge.

|  | Average Score | Highest Score | Lowest Score | Total Possible |
| :---: | :---: | :---: | :---: | :---: |
| Old Testament | 25.5 | 45 | 11 | 53 |
| New Testament | 22.2 | 39 | 6 | 47 |
| Total | 47.7 | 84 | 20 | 100 |

Items 1-53 are from the Old Testament and 54-100 cover New Testament information. The entering Bible knowledge of incoming students, their testing motivation, or both, vary significantly from student to student. The average score for the new students entering in fall 2014 is slightly above their peers who entered in fall 2013 (47.3).

## Defining Issues Test (Juniors)

During the spring 2015 testing period, 57 MVNU juniors completed the Defining Issues Test, of which 54 had usable scores. The average scores and the national average scores for juniors are presented below.

|  | DIT-2 Scores |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Group | Personal Interest | Maintain Norms | Post-conventional | N2 |
| MVNU Junior Average | 25.2 | 35.7 | 34.7 | 34.6 |
| National Junior <br> Average | 27.4 | 32.9 | 34.5 | 32.7 |

MVNU juniors were less likely to base moral decisions on factors of personal interest or benefit than juniors nationally, but they were more likely to give consideration to legal, organizational, and social norms than their peers, showing a higher degree of social norm awareness. Also, the spring 2015 juniors were more likely to make post-conventional principled decisions than their national peers, a trend also supported by elevated N2 scores. The 2015 cohort made more principled decisions (postconventional and N 2 ) than previous MVNU cohorts. Collectively this can be considered evidence of the overall effectiveness of university efforts on ethical and moral education.

## Ethnocentrism (Juniors)

Fifty-nine (59) juniors completed the Ethnocentrism Scale with a group average of 64.4, significantly higher than when they were freshmen (46.8); thus they are more centered in their own culture's orientation than when they arrived at MVNU. This same group of juniors scored slightly higher than the fall 2014 freshmen (63.5). The scores ranged from 47 to 81 , although the actual range possible lies between 18 and 90 .

Unlike previous administrations in which a significant number of students omitted one or more items, thus rendering the responses meaningless, the instructions were rewritten and clarified to emphasize the necessity of completeness. The revised instructions produced the intended results.

## ETS Proficiency Profile (Juniors)

In spring 2015, 87 juniors completed the ETS Proficiency Profile, 70 ( $80 \%$ ) of which had previously completed the instrument as a pretest; most completed the pretest in fall 2012. The following table compares the pretest and posttest averages and shows a pattern of significant improvement over time for students who had completed both assessments.

|  | Pretest Average | Posttest Average | Change |
| :---: | :---: | :---: | :---: |
| Total | 446.2 | 451.7 | +5.5 |

Additional details on skills and context-based subscores are presented in the following table.

|  | Skills Subscores |  |  |  |  | Context-Based Subscores |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Critical <br> Thinking | Reading | Writing | Mathematics | Humanities | Social <br> Sciences | Natural <br> Sciences |
| National <br> Junior <br> Average | 443.2 | 111.7 | 117.8 | 114.1 | 112.9 | 114.7 | 113.4 | 115.1 |
| MVNU <br> Junior <br> Average | 450.6 | 113.3 | 118.4 | 116.4 | 116.1 | 116.6 | 113.4 | 116.4 |
| National <br> Junior <br> Percentile <br> Equivalent | $66^{\text {th }}$ | $58^{\text {th }}$ | $45^{\text {th }}$ | $63^{\text {rd }}$ | $69^{\text {th }}$ | $58^{\text {th }}$ | $46^{\text {th }}$ | $52^{\text {nd }}$ |

ETS updates the norm tables as more students complete the specific edition of the Proficiency Profile. The norms referenced in the table above are based on students tested between July 2008 and June 2013 and involves 47,860 juniors attending baccalaureate (liberal arts) colleges (I and II).

The MVNU juniors performed at or above the national average on the total score and all subscores. The 2015 cohort did not perform as well as their 2014 MVNU peers on all scores (total and subscores).

## Test of Bible Knowledge (Juniors)

In spring 2015, 76 juniors completed the Test of Bible Knowledge (posttest), 55 (72\%) had completed the pretest upon entering in fall 2012. The distribution of scores and the average subscores and total scores are provided in the table below. Of those completing both the pretest and posttest, $49(89 \%)$ improved on the total score, $1(1 \%)$ remained at the same level, and $5(9 \%)$ declined in performance. The 2015 cohort scored slightly below the 2014 cohort on each score.

|  | Average Score | Highest Score | Lowest Score | Total Possible |
| :---: | :---: | :---: | :---: | :---: |
| Old Testament | 28.4 | 32.2 | 13 | 53 |
| New Testament | 28.0 | 47 | 44 | 47 |
| Total | 60.6 | 98 | 57 | 100 |

The testing protocol provides for pretest-posttest comparisons. For those students who completed both the pretest and posttest, the following table summarizes the average subscores, total scores, and change from the freshman to the junior year.

|  | Pretest Average | Posttest Average | Average Change |
| :---: | :---: | :---: | :---: |
| Old Testament | 28.4 | 32.2 | +3.8 |
| New Testament | 24.1 | 28.4 | +4.3 |
| Total | 52.5 | 60.6 | +8.1 |

The totality of the MVNU experience (e.g., academic, campus ministries, etc.) provides for some growth in Bible knowledge, especially considering that a significant portion of freshmen complete the Bible course during the freshman year, with as much as two years between the Bible course and the posttest (a forgetting curve).

## End of Program Assessments

## Department Assessment using Locally Developed Instruments

Academic departments are encouraged to utilize nationally normed (standardized) instruments whenever possible for determining the level of mastery of valued content and skills of seniors for a component in an end-of-program assessment. If the department's curriculum follows that commonly found in other colleges and universities, the national instruments provide a reference point and/or benchmark for how the department's students compare with those on the national scene. However, for some disciplines, national examinations are lacking. For other programs, the program goals, objectives, and curriculum are distinctively different from common practice. In these cases, academic departments at Mount Vernon Nazarene University have developed and employed locally generated instruments. The table below details the discipline, number of students participating in the assessment, and performance information.

| Discipline or Department | Number of Students <br> Completing the <br> Examination | Possible Points | Average Points Earned |
| :---: | :---: | :---: | :---: |
| Biology | 24 | 100 | 71.2 |
| Christian Education | 12 | 185 | 104.5 |
| Communication | 1 | 100 | 62.0 |
| Computer Science Network Engineer | 2 | 60 | 27.5 |
| Drama | 1 | 100 | 76.0 |
| Exercise Studies | 8 | 100 | 63.6 |
| Graphic Design | 11 | 50 | 35.7 |
| Intercultural Studies | 7 | 127 | 69.3 |
| Journalism | 3 | 100 | 59.0 |
| Philosophy | 6 | 163 | 83.3 |
| Public Relations | 14 | 100 | 58.2 |
| Religion | 0 | 142 | 84.9 |
| Religion-Humanities | 5 | 133 | na |
| Sports Management | 2 | 100 | 57.6 |
| Urban Ministries | 5 | 142 | 78.5 |
| Video Broadcasting | 100 | 76.4 |  |

It merits notation that the exercise studies and sports management examinations were updated in spring 2014, with the number of items changing. Therefore comparisons with previous years in the Physical Education Department must be cautious. Biology used both a locally developed instrument and the ACAT nationally developed exam. Those details are included on page 7. However, the majority trend from the locally development instruments across all departments is for scores to be higher than in 201314.

The number of students completing the examinations, the difficulty level of the items, and the lack of correlation between the locally developed test scores and external information (i.e., criterion-related validity) render it difficult to interpret the quality of programs. The best information available is that of the relative performance of individuals within the cohort and the trends across time, if there were not significant revisions of the examinations.

## Department Assessment using Nationally Developed Instruments

## ACAT in Art

Seven (7) seniors pursuing the art or visual arts education majors completed the ACAT in Art. The average subscores, average total score, and the average total score percentile equivalents are presented in the following table. The ACAT scores are calculated as standard scores where 500 is the average over time and the standard deviation is 100.

Five of seven students scored above 500 on the overall score. As a group, then, MVNU art graduates in 2015 exceeded the national peer group average, performing at the $55^{\text {th }}$ percentile. For this particular cohort, their strength lay in studio art and general design, above their performance in history of art. The overall cohort performance exceeds the achievement of the 2014 group.

|  | History of Art | General Design | Studio Art | Overall |
| :---: | :---: | :---: | :---: | :---: |
| Cohort Average | 496 | 505 | 534 | 513 |
| Percentile <br> Equivalent | $48^{\text {th }}$ | $52^{\text {nd }}$ | $63^{\text {rd }}$ | $55^{\text {th }}$ |

## ACAT in Biology

Over the years, the Biology Department has utilized different assessment instruments. For several years the Biology Departments employed the ETS Major Field Test in Biology, then replaced it with one developed locally. The local one did not provide comparison or context information with peer institutions. For five years now, the department has utilized the ACAT in Biology, and selected from available subscales to compose the test with five (5) subdisciplines. This year, they utilized a locally developed exam as well as the ACAT in Biology.

Two (2) biology majors completed the test in spring 2015. The following table presents the cohort averages on subscores and total score. They scored in the $33^{\text {rd }}$ percentile with the overall score.

|  | Ecology | Genetics | Invertebrate <br> Zoology | Vertebrate <br> Zoology | Vascular <br> and Non- <br> vascular <br> Plants | Overall |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cohort <br> Average | 540 | 433 | 428 | 552 | 460 | 454.5 |

Each of these, except ecology, lags behind the average from the 2014 cohort.

## ACAT in History

The History Department requires the history and integrated social studies education seniors to complete the ACAT in History. ACAT provides departmental options on the subdisciplines and related subscores, and the History Department selected the option of 10 subdisciplines. During 2014-15, eight (8) seniors completed the end-of-program assessment. The following table presents the cohort averages on subscores and total scores, and the equivalent total score percentiles.

|  | U. S. <br> 1820 to <br> 1890 | U. S. <br> Colonial <br> to 1763 | U. S. <br> 1890 to <br> 1940 | U. S. <br> 1763 to <br> 1820 | U. S. <br> 1940 to <br> present | European <br> Ancient | European <br> Early <br> Modern | French <br> Revolution <br> and <br> Napoleon | European <br> Medieval | European <br> Modern <br> to <br> Present | Overall |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cohort <br> Average | 460 | 431 | 413 | 472 | 488 | 468 | 547 | 472 | 480 | 580 | 477 |
| National <br> Percentile | $34^{\text {th }}$ | $25^{\text {th }}$ | $19^{\text {th }}$ | $39^{\text {th }}$ | $45^{\text {th }}$ | $37^{\text {th }}$ | $68^{\text {th }}$ | $39^{\text {th }}$ | $42^{\text {nd }}$ | $79^{\text {th }}$ | $41^{\text {st }}$ |

Generally across time, MVNU history and integrated social studies education majors have performed better than the average of their national peers; however, this is not the result of this year's cohort. Spring 2015 was the fifth year for the History Department employment of this instrument. With the small samples from year to year, there is significant variation in subscore patterns, so that trend determination at the microscopic level warrants caution.

## ACAT in Social Work

The Social Work Department offers programs for two (2) types of social work students: traditional undergraduate and degree-completion students. Nineteen (19) traditional seniors in social work completed the ACAT in Social Work in 2014-15; seventeen (17) were female and two (2) were male. The following table presents the subdisciplines, average subscores, the total score, and the equivalent percentiles of that total score.

|  | Diversity | Populations <br> at Risk | Social and <br> Economic <br> Justice | Values and <br> Ethics | Policies <br> and <br> Services | Social <br> Work <br> Practice | Human <br> Behavior in <br> the Social <br> Environment | Research <br> Methods | Overall |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cohort <br> Average | 485 | 477 | 502 | 521 | 515 | 515 | 487 | 489 | 498 |
| Percentile <br> Equivalent | $44^{\text {th }}$ | $41^{\text {st }}$ | $51^{\text {st }}$ | $58^{\text {th }}$ | $56^{\text {th }}$ | $56^{\text {th }}$ | $45^{\text {th }}$ | $46^{\text {th }}$ | $49^{\text {th }}$ |

The 2015 cohort performed above the national average on four subscores. The 2015 cohort scored much lower than the 2014 cohort.

The latest ACAT in Social Work scores for its degree-completion seniors is from spring 2014 (Mansfield 002 cohort). The profile of the group ( 9 females) is presented in the following table:

|  | Diversity | Populations <br> at Risk | Social and <br> Economic <br> Justice | Values and <br> Ethics | Policies <br> and <br> Services | Social <br> Work <br> Practice | Human <br> Behavior in <br> the Social <br> Environment | Research <br> Methods | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cohort <br> Average | 427 | 373 | 355 | 424 | 394 | 357 | 381 | 406 | 347 |
| Percent- <br> ile <br> Equival- <br> ent | $23^{\text {nd }}$ | $10^{\text {th }}$ | $7^{\text {th }}$ | $21^{\text {st }}$ | $14^{\text {th }}$ | $8^{\text {th }}$ | $12^{\text {th }}$ | $17^{\text {th }}$ | $6^{\text {th }}$ |

## ETS Major Field Test in Business (BBA degree-completion students)

Prior to fall 2012, the Jetter School of Business tested its BBA degree-completion students with the ETS Major Field Test in Business. The scores were not as strong as the school anticipated, which prompted faculty to begin a review whether the test aligned well with instructional objectives and initiate a search for alternate assessment instruments. As a consequence, the BBA students were not tested in 2013-14, while the school researched and evaluated alternate testing instruments. Beginning in July 2014, the school utilized the assessment tool from Peregrine Academic Services, which aligns with Accreditation

Council for Business Schools and Programs (ACBSP) program accreditation standards. The Peregrine test contains seventeen (17) subject areas of which MVNU students scored above ACBSP and faith-based institutions. The table below illustrates the improvement in overall average score for the 2014-15 BBA degree-completion program.

| Cohort | Pretest | Posttest | Change |
| :---: | :---: | :---: | :---: |
| $2014-15$ | 44.71 | 54.72 | +10.01 |

## ETS Major Field Test in Business (traditional undergraduate students)

Thirty-five (35) graduates in the Business Department completed the Major Field Test in Business in 2014-15. The cohort's average total score was 151.9 and corresponds to the $48^{\text {th }}$ percentile; the cohort performed slightly below the average baccalaureate level business student nationally, and the results are similar to those of prior MVNU cohorts.

The following table provides the assessment indicators, the average percent of items mastered by the 2015 cohort, and the national percentile equivalents as a reference point.

| Assessment Indicator | Average Percent of Correct Items | Percentile Equivalent |
| :---: | :---: | :---: |
| Accounting | 43 | $54^{\text {th }}$ |
| Economics | 38 | $32^{\text {nd }}$ |
| Management | 60 | $75^{\text {th }}$ |
| Quantitative Business Analysis | 38 | $56^{\text {th }}$ |
| Finance | 44 | $55^{\text {th }}$ |
| Marketing | 57 | $53^{\text {rd }}$ |
| Legal and Social Environment | 62 | $57^{\text {th }}$ |
| Information Systems | 47 | $29^{\text {th }}$ |
| International Issues | 50 | $93^{\text {rd }}$ |

As a group, the cohort of traditional undergraduate business students matched or exceeded the $50^{\text {th }}$ percentile on seven (7) of the nine (9) assessment indicators, demonstrating that when compared to other undergraduate business students, they are at or above the national average in those subdisciplines. Results of these assessment indicators do vary from the pattern of previous years.

The pretest, posttest, and change averages are presented below for those who had completed the Major Field Test in Business when they began study in the Business Department and the end-of-program assessment.

| Pretest Average | Posttest Average | Average Change |
| :---: | :---: | :---: |
| 141.5 | 151.9 | 10.4 |

## ETS Major Field Test in Chemistry

The Education Testing Service provides subscore and assessment indicator information only if the minimum cohort size of five (5) is attained. Therefore, the chemistry cohort remains open and will be combined with next year's cohort.

## ETS Major Field Test in Computer Science

Due to low program enrollment, the cohort of computer science graduates from spring 2015 remains open. This cohort will be combined with the spring 2016 cohort.

## ETS Major Field Test in Criminal Justice

Ten (10) criminal justice graduates completed the ETS Major Field Test in Criminal Justice in 2015. Collectively the graduates performed very well when comparing their total and subscores with their peers on the national scene. The cohort's total score average of 163.7 was above the national average of 153.3; the cohort's equivalent average was the $69^{\text {th }}$ percentile. Eight (8) of the ten (10) graduates ( $80 \%$ ) scored at or above the national average.

Like the majority of ETS Major Field Tests, the criminal justice examination presents assessment indicators to provide students and departments with additional feedback about the mastery of specific content areas within the larger criminal justice field. The following table summarizes the average percent of correct items on each indicator, and the percentile equivalent for that number of correct items. The department and the individual students are to be commended upon their overall performance.

| Assessment Indicator | Average Percent of Correct Items | Percentile Equivalent |
| :---: | :---: | :---: |
| Theories of Criminal Behavior | 52 | $93^{\text {rd }}$ |
| The Law | 63 | $91^{\text {st }}$ |
| Law Enforcement | 65 | $88^{\text {th }}$ |
| Corrections | 68 | $97^{\text {th }}$ |
| The Court System | 68 | $92^{\text {nd }}$ |
| Critical Thinking | 69 | $97^{\text {th }}$ |
| Research Methodology | 49 | $67^{\text {th }}$ |

Their mastery appears to be well dispersed across the broad content domains in the criminal justice field.

## ETS Major Field Test in Literature in English

ETS released a new edition of the Major Field Test in Literature in English for the 2011-12 year. Nine (9) MVNU students completed the examination in spring 2015, and the average total score for the cohort was 159.3, which corresponds to the $56^{\text {th }}$ percentile nationally. The following table provides the subscore profile and national comparisons. Although on each of the subfields MVNU seniors collectively performed about the same as their national peers, scores were lower than the 2014 cohort.

| Subscore | MVNU Average | National <br> Average | MVNU <br> Percentile |
| :---: | :---: | :---: | :---: |
| Literature 1900 <br> and Earlier | 58.3 | 53.7 | $54^{\text {th }}$ |
| Literature 1901 <br> and Later | 60.8 | 54.0 | $59^{\text {th }}$ |
| Literary Analysis | 59.8 | 53.8 | $57^{\text {th }}$ |
| Literature <br> History and <br> Identification | 56.4 | $52^{\text {nd }}$ |  |

Assessment indicators disaggregate questions in other ways than subscores and provide additional perspectives on the examinations and student knowledge. The assessment indicators for the Major Field Test in Literature in English are summarized in the following table.

| Assessment Indicator | Average Percent of Correct Items | Percentile Equivalent |
| :---: | :---: | :---: |
| British Literature Pre-1660 | 60 | $82^{\text {de }}$ |
| British Literature 1660-1900 | 45 | $61^{\text {st }}$ |
| American Literature to 1900 | 53 | $50^{\text {th }}$ |
| British and American Literature <br> 1901-1945 | 54 | $73^{\text {rd }}$ |
| Literature in English since 1945 | 59 | $81^{\text {st }}$ |
| Literary History | 46 | $38^{\text {th }}$ |
| Identification | 47 | $75^{\text {th }}$ |
| Literary Theory | 45 | $67^{\text {th }}$ |

## ETS Major Field Test in Mathematics

Eleven (11) mathematics graduates completed the ETS Major Field Test in Mathematics in 2015. The members achieved a total score mean of 143.7, which corresponds to the $24^{\text {th }}$ percentile on the most recent norms provided by ETS. This is a slight improvement over the 2014 cohort. The average total score from 2007 through 2015 is 148.7 , which approximates the $41^{\text {st }}$ percentile nationally.

The current version of the examination has five (5) assessment indicators. The following table summarizes the assessment indicators and provides a reference to national percentile equivalents.

| Assessment Indicator | Average Percent of Correct Items | Percentile Equivalent |
| :---: | :---: | :---: |
| Calculus | 21 | $6^{\text {th }}$ |
| Algebra | 25 | $10^{\text {th }}$ |
| Routine | 20 | $4^{\text {th }}$ |
| Non-routine | 26 | $45^{\text {th }}$ |
| Applied | 29 | $21^{\text {st }}$ |

## ETS Major Field Test in Music

There were fewer than five (5) music majors completing the program in 2013-14 for ETS to provide cohort performance information. Therefore the cohort scores were combined with 2014-15 graduates to achieve a total score mean of 146.1, which is at approximately the $39^{\text {th }}$ percentile.

|  | Subscores | Subscore Percentile |
| :---: | :---: | :---: |
| Listening Comprehension | 47.9 | 41.8 |
| Written Theory | 44.3 | 34.9 |
| Written History | 47.7 | 41.0 |

## ETS Major Field Test in Political Science

As with other cohorts, there were fewer than five (5) political science majors completing the program in 2014-15 so the results have been combined with to include 2012 through 2015 cohorts. The collective performance of MVNU graduates overall mean score is lower than the national average of 152.2. They are at or above the subscores of the national averages.

|  | Subscores |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Cohort | U.S Government <br> and Politics | Comparative <br> Government and <br> Politics | International <br> Relations | Overall Score | Percentile |
| 2012-2014 | 53.2 | 53.8 | 47.6 | 151.6 | 47.2 |
| Departmental Average | 53.2 | 53.8 | 47.6 | 151.6 | 47.2 |

## ETS Major Field Test in Psychology

Sixteen (16) psychology seniors completed the Major Field Test in Psychology. This year, as well as in three other years of the last seven, the total score average was above the national average of 155.8; this year the cohort average of 160.3 represented the $53^{\text {rd }}$ percentile nationally with a fairly balanced subscore pattern across the departmental curriculum.

Overall there is relative balance of mastery on psychology's subfields as illustrated in the following table.

| Subscore | MVNU Average | National <br> Average | MVNU <br> Percentile |
| :---: | :---: | :---: | :---: |
| Learning and <br> Cognition | 62.4 | 55.0 | $64^{\text {th }}$ |
| Perception, <br> Sensation, and <br> Physiology | 61.4 | 55.9 | $57^{\text {th }}$ |
| Clinical, <br> Abnormal and <br> Personality | 63.8 | 56.3 | $64^{\text {th }}$ |
| Developmental <br> and Social | 56.9 | 55.4 | $50^{\text {th }}$ |

The assessment indicators with the average percent of correct items and the contextualizing information are provided in the following table.

| Assessment Indicator | Average Percent of Correct Items | Percentile Equivalent |
| :---: | :---: | :---: |
| Memory and Thinking | 49 | $70^{\text {th }}$ |
| Sensory and Physiology | 60 | $87^{\text {th }}$ |
| Developmental | 48 | $32^{\text {nd }}$ |
| Clinical and Abnormal | 81 | $98^{\text {th }}$ |
| Social | 68 | $78^{\text {th }}$ |
| Measurement and Methodology | 57 | $58^{\text {th }}$ |

The assessment indicator information speaks again to the overall strength of MVNU's curriculum as embodied in the performance of its psychology graduates.

## ETS Major Field Test in Sociology

As with other majors with less than five graduates each year, the Sociology cohort contains graduates from the spring 2013 through spring 2015 in the report and analysis. Nine (9) graduates participated in the assessment with an overall average of 145.0 , which is the $38^{\text {th }}$ percentile.

| Subscore | MVNU Average | National Average | MVNU Percentile |
| :---: | :---: | :---: | :---: |
| Core Sociology | 43.9 | 48.6 | 35.6 |
| Critical Thinking | 44.2 | 48.3 | 35.3 |

The current version of the examination has nine (9) assessment indicators. The following table summarizes the assessment indicators and provides a reference to national percentile equivalents.

| Assessment Indicator | Mean Percent Correct | Percentile Equivalent |
| :---: | :---: | :---: |
| General Theory | 40 | $15^{\text {th }}$ |
| Methodology and Statistics | 43 | $40^{\text {th }}$ |
| Criminology and Deviance | 36 | $20^{\text {th }}$ |
| Social Stratification | 44 | $19^{\text {th }}$ |
| Race, Ethnicity, Gender | 56 | $47^{\text {th }}$ |
| Social Institutions | 40 | $34^{\text {th }}$ |
| Social Psychology | 59 | $38^{\text {th }}$ |
| Gender | 45 | $17^{\text {th }}$ |
| Global | 39 | $19^{\text {th }}$ |

## Ivy Software MBA Test

After pilot testing the Ivy Software MBA Test in 2011-12, the Jetter School of Business has continued with it as the end-of-program assessment for the Master of Business Administration (MBA) and Master of Science in Management (MSM) degrees. In 2014-15, 77 MBA and MSM students completed the assessment in the capstone course; 49 completed the assessment in fall 2014, and another 28 did so in spring 2015.

The summary is provided in the following table with comparison information of the national and Accreditation Council for Business Schools and Programs (ASBSP), of which the Jetter School of Business is a member.

|  | Total Score (Percent Correct) <br> Average |
| :---: | :---: |
| MVNU Testing | 51.5 |
| All (National) MBA Testing | 56 |
| ACBSP Member Testing | 56 |

The Ivy Software MBA Test provides scores for subdisciplines with the field of business. The following summarizes the subject matter differentiation with reference to the national and ACBSP norms during the same timeframe.

| Subject Matter Area | MVNU Average | All (National) MBA Testing | ACBSP Member Testing |
| :--- | :---: | :---: | :---: |
| Financial Accounting | 54 | 62 | 62 |
| Management | 60 | 62 | 62 |
| Marketing | 54 | 57 | 57 |
| Strategy | 54 | 48 | 48 |
| Managerial Accounting | 47 | 55 | 55 |
| Corporate Finance | 45 | 52 | 52 |

As a group, MVNU graduate business students scored above the reference groups on strategy (nonquantitative) domains, and slightly below on the quantitative areas.

## Additional Departmental Assessments

The results described in this report are from the administration of instruments organized by the Assessment Office. A number of academic units require and/or administer other direct performancebased assessments dedicated to documenting the mastery of content and technique, some of which include the following:

- Senior art shows - Art and Design Department
- Junior and senior recitals, ensemble concerts - Music Department


## Observations and Recommendations

Longitudinal data for general education and content tests is included at the end of this report. It is alarming to note that students leave MVNU more centered in their own culture than when they arrived at MVNU (Ethnocentrism Scale). However, students Bible knowledge (Test of Bible Knowledge) increased while at MVNU and are less likely to base moral decisions on factors of personal interest or benefit than junior's nationally (Defining Issues Test). Students also show growth and score higher than juniors nationally in their skills of critical thinking, reading, and writing (ETS Proficiency Profile). The fluctuation of content exam scores might be explained by the relation of ACT scores, course grades, GPA, and motivation factors of students by cohort. Many programs are to be congratulated on the achievement scores in content tests where they scored higher than the national cohorts.

Mount Vernon Nazarene University, collects assessment data that is reliable (repeatable) and valid (accurately measuring learning). However, dialog needs to continue of how the university might improve student motivation and create value to students and departments through communication, feedback, and establishing minimum, acceptable performance levels.

## Appendix

## Longitudinal Data Available by Test

## General Education Assessments

| Defining Issues Test |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | DIT-2 Scores |  |  |  |
| Cohort | Personal <br> Interest | Maintain <br> Norms | Post- <br> conventional | N2 |
| 2014 | 22.8 | 36.1 | 35.1 | 36.1 |
| 2015 | 25.2 | 35.7 | 34.7 | 34.6 |
| Overall Average | 24.0 | 35.9 | 34.9 | 35.35 |


| Ethnocentrism Scale (Juniors) |  |  |  |
| :---: | :---: | :---: | :---: |
| Cohort | Pretest <br> Average | Posttest <br> Average | Change |
| 2014 | 56.3 | 40 | 16.3 |
| 2015 | 46.8 | 64.4 | 17.6 |
| Overall Average | 51.6 | 52.2 | 16.7 |

ETS Proficiency Profile

| Cohort | Pretest <br> Average | Posttest <br> Average | Change |
| :---: | :---: | :---: | :---: |
| 2014 | 444.3 | 453.8 | 9.6 |
| 2015 | 446.2 | 451.7 | 5.5 |
| Overall Average | 445.3 | 452.8 | 7.6 |

Basic Bible Knowledge

| Cohort | Average <br> Score | Highest <br> Score | Lowest <br> Score |
| :---: | :---: | :---: | :---: |
| 2014 | 64.7 | 93 | 32 |
| 2015 | 60.6 | 98 | 57 |
| Total | 62.7 | 95.5 | 44.5 |

## Departmental Assessments using Nationally Developed Instruments

## ACAT Art Average

|  | Subscores |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Cohort | History of Art | Design: <br> General | Studio Art | Overall Score | Percentile |
| 2011 | 457.0 | 548.3 | 481.0 | 503.0 | 51.0 |
| 2012 | 569.7 | 553.3 | 593.3 | 585.7 | 77.3 |
| 2013 | 483.4 | 558.9 | 526.9 | 533.1 | 60.8 |
| 2014 | 528.2 | 564.3 | 522.4 | 550.3 | 66.4 |
| 2015 | 496.1 | 504.6 | 534.4 | 513.0 | 54.6 |
| Departmental Average | $\mathbf{5 0 5 . 7}$ | $\mathbf{5 4 7 . 4}$ | $\mathbf{5 2 7 . 5}$ | $\mathbf{5 3 5 . 7}$ | $\mathbf{6 1 . 6}$ |

ACAT Biology Average

|  | Subscores |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cohort Average | Ecology | Genetics | Invertebrate <br> Zoology | Vertebrate <br> Zoology | Vascular <br> and Non- <br> vascular <br> Plants | Overall <br> Score | Percentile |
| 2011 | 507.5 | 507.8 | 486.1 | 641.1 | 485.4 | 488.3 | 46.1 |
| 2012 | 492.5 | 481.9 | 431.9 | 564.3 | 485.1 | 448.3 | 34.9 |
| 2013 | 538.8 | 557.8 | 486.8 | 615.3 | 490.2 | 520.3 | 54.1 |
| 2014 | 474.9 | 490.5 | 452.4 | 559.9 | 493.6 | 467.6 | 38.6 |
| 2015 | 540.0 | 432.5 | 427.5 | 552.0 | 459.5 | 454.5 | 32.5 |
| Departmental Average | 501.5 | 502.7 | 460.2 | 590.7 | 487.5 | 476.2 | 42.0 |


| ACAT History Averages |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Subscores |  |  |  |  |  |  |  |  |  |  |  |
| Cohort Year | $\begin{gathered} \text { US } 1820 \text { to } \\ 1890 \end{gathered}$ | US Colonial to 1763 | $\begin{gathered} \text { US } 1890 \text { to } \\ 1940 \end{gathered}$ | $\begin{gathered} \text { US } 1763 \text { to } \\ 1820 \end{gathered}$ | US 1940 to Present | European Ancient | European Early Modern | French Revolution and Napoleon | European Modern | European <br> Modern to Present | Overall Score | Percentile |
| 2011 | 439.3 | 456.3 | 429.1 | 450.5 | 458.6 | 450.9 | 513.5 | 532.8 | 449.3 | 440.0 | 443.1 | 35.8 |
| 2012 | 547.4 | 490.8 | 507.6 | 499.2 | 494.8 | 462.0 | 493.6 | 507.6 | 437.0 | 464.2 | 490.0 | 46.4 |
| 2014 | 509.3 | 474.0 | 522.3 | 575.0 | 557.2 | 453.6 | 582.0 | 500.3 | 484.2 | 590.6 | 544.8 | 63.8 |
| 2015 | 460.1 | 430.6 | 413.5 | 472.1 | 487.6 | 467.4 | 546.5 | 472.0 | 480.6 | 580.4 | 476.9 | 41.6 |
| Departmental Average | 483.9 | 460.5 | 466.0 | 501.7 | 502.0 | 457.9 | 539.5 | 502.6 | 466.1 | 526.6 | 490.4 | 47.5 |


| Social Work Traditional ACAT |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Subscores |  |  |  |  |  |  |  |  |  |
| Cohort | Diversity | Populations at Risk | Social and Economic Justice | Values and Ethics | Policy and Services | Social Work Practices | Human Behavior in the Social Environment | Research <br> Methods | Overall Score | Percentile |
| 2011 | 451.3 | 463.8 | 463.3 | 503.0 | 449.8 | 438.4 | 476.9 | 509.5 | 457.6 | 39.1 |
| 2012 | 487.1 | 441.7 | 443.7 | 503.0 | 479.2 | 507.6 | 498.4 | 531.6 | 483.7 | 44.4 |
| 2013 | 484.7 | 476.6 | 493.4 | 518.4 | 538.6 | 505.9 | 474.0 | 556.0 | 509.7 | 53.1 |
| 2014 | 506.7 | 568.0 | 500.0 | 551.3 | 575.5 | 565.2 | 534.7 | 537.8 | 559.8 | 69.7 |
| 2015 | 484.6 | 477.2 | 502.1 | 520.7 | 515.4 | 515.1 | 486.9 | 489.1 | 498.5 | 50.8 |
| Departmental Average | 485.1 | 490.5 | 482.8 | 521.6 | 515.7 | 512.2 | 497.5 | 521.8 | 505.6 | 52.6 |


| ACAT Social Work Degree Completion Average |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Subscores |  |  |  |  |  |  |  |  |  |  |
| Academic Year Average | 1 Diversity | $2$ <br> Populations at Risk | 3 Social and Economic Justice | 4 Values and Ethics | 5 Policy and Services | 6 Social <br> Work <br> Practice | 7 Human Beahvior in the Social Environment | 8 Research Methods | Overall Score | Percentile |
| 2011-12 | 455.5 | 479.5 | 486.8 | 519.1 | 489.6 | 512.6 | 478.4 | 469.4 | 480.9 | 44.6 |
| 2012-13 | 469.9 | 501.3 | 492.7 | 514.8 | 557.7 | 534.5 | 499.1 | 503.6 | 515.1 | 55.5 |
| 2013-14 | 453.6 | 476.4 | 460.8 | 485.1 | 508.4 | 503.0 | 469.9 | 471.1 | 471.6 | 42.4 |
| Program Average | 459.0 | 484.5 | 478.3 | 500.7 | 513.5 | 513.8 | 479.7 | 479.1 | 485.2 | 46.2 |

MFT Traditional Business

| Cohort | Overall <br> Score | Percentile |
| :---: | :---: | :---: |
| 2011 | 153.6 | 46.1 |
| 2012 | 151.2 | 45.5 |
| 2013 | 153.5 | 49.7 |
| 2014 | 151.7 | 45.3 |
| 2015 | 151.9 | 48.3 |
| Departmental Average | $\mathbf{1 5 2 . 7}$ | $\mathbf{4 7 . 0}$ |

## MFT Criminal Justice

| Cohort | Overall Score | Percentile |
| :---: | :---: | :---: |
| 2011 | 168.5 | 79.1 |
| 2012 | 172.8 | 86.0 |
| 2013 | 163.7 | 66.4 |
| 2014 | 165.5 | 73.3 |
| 2015 | 163.7 | 68.5 |
| Departmental Average | $\mathbf{1 6 2 . 1}$ | $\mathbf{6 4 . 3}$ |

## MFT Literature in English

|  | Subscores |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Literature <br> 1900 and <br> Earlier | Literature <br> 101 and <br> Later | Literary <br> Analysis | Literature <br> History and <br> ldentification | Overall <br> Score | Percentile |  |
| 2011 | 60.4 | 54.4 | 59.2 | 57.2 | 159.4 | 57.1 |  |
| 2012 | 69.1 | 64.4 | 67.1 | 66.0 | 168.4 | 73.3 |  |
| 2013 | 62.1 | 60.6 | 63.1 | 61.0 | 162.0 | 60.9 |  |
| 2014 | 61.4 | 64.4 | 62.3 | 62.7 | 162.8 | 62.5 |  |
| 2015 | 58.3 | 60.8 | 59.8 | 56.4 | 159.3 | 56.0 |  |
| Departmental Average | $\mathbf{5 9 . 1}$ | $\mathbf{5 8 . 1}$ | $\mathbf{5 9 . 6}$ | $\mathbf{5 7 . 0}$ | $\mathbf{1 5 9 . 4}$ | $\mathbf{5 6 . 8}$ |  |

## MFT Mathematics

| Cohort | Overall <br> Score | Percentile |
| :---: | :---: | :---: |
| $2011-2012$ | 155.2 | 41.8 |
| $2012-2014$ | 142.0 | 19.0 |
| 2015 | 143.7 | 24.2 |
| Departmental Average | $\mathbf{1 4 8 . 7}$ | $\mathbf{3 2 . 5}$ |


|  | Assessment Indicator Percent Correct |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Calculus | Algebra | Routine | Nonroutine | Applied |
| Spring 2011-12 Cohort | 35 | 35 | 34 | 33 | 37 |
| Spring 2012-14 Cohort | 21 | 20 | 20 | 19 | 30 |
| Spring 2015 Cohort | 21 | 25 | 20 | 26 | 29 |

## MFT Music

|  | Subscores |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cohort | Listening <br> Comprehension | Written <br> Theory | Written <br> History | Overall <br> Score | Percentile |  |
| $2011-2012$ | 43.3 | 41.6 | 42.3 | 141.3 | 29.5 |  |
| $2013-2015$ | 47.9 | 44.3 | 47.7 | 146.1 | 39.0 |  |
| Departmental Average | 44.8 | 41.9 | 43.2 | 142.3 | 30.8 |  |

MFT Political Science

|  | Subscores |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | U.S <br> Government <br> and Politics | Comparative <br> Government <br> and Politics | International <br> Relations | Overall <br> Score | Percentile |
| $2012-2014$ | 53.2 | 53.8 | 47.6 |  | 47.2 |
| Departmental Average | 53.2 | 53.8 | 47.6 | 151.6 | 47.2 |

## MFT Psychology

|  | Subscores |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Learning and <br> Cognition | Perception, <br> Sensation, <br> Physiology | Clinical, <br> Abnormal and <br> Personality | Developmental <br> and Social | Overall <br> Score | Percentile |
| 2011 | 53.1 | 53.1 | 58.9 | 56.6 | 155.6 | 41.5 |
| 2012 | 53.7 | 57.7 | 61.8 | 59.5 | 157.9 | 53.5 |
| 2013 | 65.3 | 64.3 | 64.7 | 61.1 | 164.6 | 65.5 |
| 2014 | 59.0 | 64.2 | 67.0 | 55.3 | 162.0 | 61.6 |
| 2015 | 62.4 | 61.4 | 63.8 | 56.9 | 160.3 | 56.6 |
| Departmental Average | $\mathbf{5 9 . 1}$ | $\mathbf{5 8 . 7}$ | $\mathbf{6 1 . 8}$ | $\mathbf{5 8 . 6}$ | $\mathbf{1 5 9 . 3}$ | $\mathbf{5 3 . 4}$ |

## MFT Sociology

|  | Subscores |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Cohort | Core <br> Sociology | Critical <br> Thinking | Overall <br> Score | Percentile |
| 2011 | 53.6 | 50.3 | 152.3 | 56.4 |
| 2012 | 56.8 | 55.1 | 153.3 | 65.8 |
| 2013 | 59.8 | 52.4 | 154.8 | 68.8 |
| $2013-2015$ | 43.9 | 44.2 | 145.0 | 38.4 |
| Departmental Average | $\mathbf{5 2 . 8}$ | $\mathbf{5 0 . 5}$ | $\mathbf{1 5 0 . 6}$ | $\mathbf{5 4 . 8}$ |

MBA Business Ivy Soft

|  | Subscores |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cohort | Financial <br> Accounting | Management | Marketing | Strategy | Managerial <br> Accounting | Corporate <br> Finance | Overall <br> Score |
| Fall 2013 | 61.1 | 60.2 | 52.6 | 50.2 | 56.6 | 51.5 | 55.1 |
| Spring 2014 | 52.1 | 62.2 | 54.5 | 53.8 | 44.2 | 44.9 | 50.3 |
| Fall 2014 | 54.0 | 59.9 | 53.5 | 53.8 | 47.1 | 45.2 | 51.7 |
| Spring 2015 | 51.5 | 63.2 | 55.6 | 50.0 | 41.5 | 44.5 | 50.6 |
| Departmental Average | $\mathbf{5 4 . 9}$ | $\mathbf{6 1 . 1}$ | $\mathbf{5 3 . 9}$ | $\mathbf{5 2 . 1}$ | $\mathbf{4 7 . 8}$ | $\mathbf{4 6 . 6}$ | $\mathbf{5 2 . 0}$ |

