



East Stroudsburg University

ETS Proficiency Profile Results

2013-2014 Academic Year

Office of Institutional Research and Assessment
Fall 2014

Executive Summary

ETS Proficiency Profile 2013-2014 Academic Year

Since 2009, East Stroudsburg University has been administering the ETS Proficiency Profile (EPP) as a means to assess incoming freshmen and outgoing seniors' skills in reading, writing, critical thinking, and mathematics. This report provides background information regarding ESU's participation in the ETS Proficiency Profile, and analyzes the results of the 2013-2014 academic year administration.

Why the Proficiency Profile?

Used as a means to assess a portion of the institution's General Education program, the EPP is also required by the Pennsylvania State System of Higher Education (PASSHE) as part of the institution's performance funding criteria determined through a value-added report. The assessment provides comparative data between ESU and similar institutions, and it helps ESU improve student learning by providing faculty and the administration with information about freshmen and senior general education skills that can inform program and curricular modifications, learning design, and improvements to assessments. The exam also fulfills the state-mandated Voluntary System of Accountability (VSA) requirement to measure general education outcomes and to provide key accountability information to the public.

Key Findings

- ESU *total mean scores* improved by 7.1 points between Freshmen and Senior cohorts.
- All skill and subject areas except *humanities* show increases in average scores between Freshmen and Senior cohorts, ranging from 0.87 to 2.54 points higher.
- Compared to PASSHE mean scores, ESU Freshmen have a higher *total mean score*, as well as higher mean scores in *reading*, *writing*, *humanities*, and *natural sciences*.
- ESU Seniors have a higher mean score in *writing* than other US 4-year institutions.
- Compared to national averages, ESU Freshmen and Seniors answer more questions correctly in mathematics.
- Compared to national averages, Freshmen struggle primarily with reading and critical thinking. Seniors answer fewer writing questions correctly.
- ESU has a lower percentage of students (Freshmen and Seniors) *proficient* in all skill and subject areas when compared to PASSHE institutions and US averages.
- Compared to other PASSHE schools, ESU's strongest areas (based on the percent of schools with mean scores below ESU) for Freshmen are *writing*, *reading*, and *humanities*.
- Compared to other PASSHE schools, ESU's strongest area (based on the percent of schools with mean scores below ESU) for Seniors is *writing*.
- Freshmen and Senior cohorts both scored "Below Expected" on *critical thinking* in the ETS Learning Gains Report based on SAT score-based projected exam performance.
- Both Freshmen and Seniors are "At Expected" in *writing* for this same report.

ETS Proficiency Profile Report

2013-2014 Academic Year

East Stroudsburg University of Pennsylvania (ESU) administered the ETS Proficiency Profile to incoming first-time Freshmen in the summer of 2013 and to graduating Seniors during the Spring 2014 semester. The abbreviated test that ESU uses (and that is used by a majority of participating institutions) is a 36 question multiple choice exam that takes approximately 40 minutes to complete, and it is just one of the measures ESU has chosen to demonstrate students' attainment of General Education skills. This report will provide background on the exam and why it is used at ESU, as well as an overview of the results of the 2013-2014 academic year administration.

Background

The Purpose of the Proficiency Profile

The ETS Proficiency Profile is a standardized test composed of 36 multiple choice questions assessing students' general education skills in reading, writing, critical thinking, and mathematics. Divided into three broad knowledge areas (humanities, social sciences, and natural sciences), ESU has been administering the abbreviated exam as a means to assess a portion of the institution's General Education program since 2009. A requirement of the Pennsylvania State System of Higher Education (PASSHE) to determine part of the institution's performance funding criteria, the assessment also provides comparative data between ESU and similar institutions. Most importantly, it helps ESU improve student learning by providing faculty and the administration with information about freshmen and senior general education skills that can inform program and curricular modifications, learning design, and improvements to assessments. The Proficiency Profile also fulfills the state-mandated Voluntary System of Accountability (VSA) requirement to measure general education outcomes and to provide key accountability information to the public. See [Appendix B](#) for an explanation of proficiency classifications.

The VSA and the Learning Gains Report

Meant to demonstrate accountability and stewardship, measure educational outcomes, and assemble information in an accessible and easily understandable manner, the Voluntary System of Accountability (VSA) has been required of all 14 PASSHE schools since Spring 2008. Using a common web reporting template to communicate information on the undergraduate student experience to the public, institutions were given a choice of three standardized assessments to choose from to evaluate student abilities in critical thinking, analytical reasoning, and written communication. Following a series of open campus discussions, ESU chose the ETS Proficiency Profile, then called the Measure of Academic Proficiency and Progress (MAPP), in Spring 2009. The results of assessment of freshmen and seniors are used to calculate a value added score that represents the learning gained through the university experience. ETS calls this their "Learning Gains Report." This is discussed in further detail in the "Findings" section.

Sample Size

In keeping with VSA guidelines, ESU uses a cross-sectional study design that compares different cohorts of freshmen and seniors. The institution also follows VSA guidelines recommending a minimum of 400 students (200 freshmen and 200 seniors) to provide an adequately representative data source for their College Portrait. ESU recognizes that not all students who take the exam will be included in the analysis. Some, for example, could fail to complete the required minimum of 75% of the exam, or they could have been misidentified in the wrong class level. As such, each semester the school aims to administer the Proficiency Profile to approximately 300 first-time freshmen and 300 graduating seniors.

Results

The Proficiency Profile provides an overall (total) score for individuals between 400 and 500. It also provides separate scores between 100 and 130 for each of the four skills (reading, writing, critical thinking, and mathematics), and for each of the three subject contexts (humanities, social sciences, and natural sciences). These are referred to as the exams “scaled scores.” See [Appendix A](#) for a breakdown of Freshmen and Senior results according to content type and exam item. Finally, students are given proficiency classifications (proficient, marginally proficient, or not proficient) for each of the different levels of skills (mathematics 1, mathematics 2, and so on). This section will discuss Freshmen and Senior scores for the 2013-2014 academic year. Further detail on the scoring system and structure of the exam can be found in [Appendix B](#).

Summary of Scaled Scores

Table 1 provides means, standard deviations, quartiles, and confidence limits¹ for the total scaled score as well as for both skills and context area scaled scores. These results are intended to provide comparisons between groups of students and to demonstrate ability in skill dimension. US data are for all four-year institutions, including Carnegie classifications of Doctoral/Research Universities I and II, Master’s (Comprehensive) Colleges and Universities I and II and Baccalaureate (Liberal Arts) Colleges I and II. Nationwide data was collected between July 2008 and June 2013. PASSHE data are gathered from an ETS Proficiency Profile Custom Comparative Data Report of Freshmen and Seniors calculated separately, and include scores from July 2009 through June 2014.

¹ Confidence limits are based on the assumption that the questions contributing to each scaled score are a sample from a much larger set of possible questions that could have been used to measure those same skills. If the group of students taking the test is a sample from some larger population of students eligible to be tested, the confidence limits include both sampling of students and sampling of questions as factors that could cause the mean score to vary. The population size used in the calculation of the confidence limits for the mean scores in this report is 396 Freshmen and 310 Seniors. (Source: ETS)

Table 1.

				East Stroudsburg University					
	Possible Range	Nat'l* Mean Score	PA** Mean Score	ESU Mean Score	95% Conf. Limits	Std Dev	25th %ile	50th %ile	75th %ile
FALL 2013 FRESHMEN MEAN SCORES									
Total Score	400-500	437.5	433.7	434.6	433-436	15.1	426	433	443
Skills Subscores:									
<i>Critical Thinking</i>	100-130	109.9	108.9	108.1	107-109	5.2	105	107	111
<i>Reading</i>	100-130	115.7	114.3	115.4	114-116	6.8	111	115	120
<i>Writing</i>	100-130	113.0	112.4	113.2	112-114	4.7	111	113	116
<i>Mathematics</i>	100-130	111.9	111.2	111.1	110-112	5.1	108	110	114
Context-Based Subscores:									
<i>Humanities</i>	100-130	113.1	112.5	113.6	113-115	6.1	108	112	118
<i>Social Sciences</i>	100-130	111.7	110.7	110.2	109-111	5.8	106	109	114
<i>Natural Sciences</i>	100-130	113.4	112.7	113.3	112-114	5.5	109	112	117
SPRING 2014 SENIOR MEAN SCORES									
Total Score	400-500	447.9	443.3	441.7	440-443	15.9	432	439	452
Skills Subscores:									
<i>Critical Thinking</i>	100-130	112.8	111.2	110.0	109-111	5.6	106	110	113
<i>Reading</i>	100-130	118.9	117.3	116.8	116-118	6.5	112	116	122
<i>Writing</i>	100-130	114.9	114.3	114.1	113-115	4.4	111	113	118
<i>Mathematics</i>	100-130	114.31	113.6	113.7	113-115	5.3	110	113	116
Context-Based Subscores:									
<i>Humanities</i>	100-130	115.7	114.2	112.9	112-114	6.1	107	112	117
<i>Social Sciences</i>	100-130	114.4	113.0	111.7	111-113	5.7	106	110	114
<i>Natural Sciences</i>	100-130	116.0	115.0	114.7	114-116	5.2	110	115	119

* National averages were collected from four-year institutions only.

** 10 PASSHE schools were included in this analysis. For a list, see footnote #2.

Comparative Data

Table 2 presents the percent of PASSHE schools² scoring below ESU for entering Freshmen and graduating Seniors by Proficiency Profile score category. Data are gathered from an ETS Proficiency Profile Custom Comparative Data Report of Freshmen and Seniors calculated separately, and include mean scores calculated over time from July 2009 through June 2014.

² 10 PASSHE schools were included in the analysis: Bloomsburg University, California University, Cheyney University, Clarion University, East Stroudsburg University, Edinboro University, Kutztown University, Lock Haven University, Mansfield University, and Slippery Rock University

2013-2014 Percentile Comparison		
Table 2.		
	Freshmen	Seniors
Score Category	Percent Scoring Below ESU	Percent Scoring Below ESU
Total Score	30%	10%
Skills Subscores:		
Critical Thinking	20%	10%
Reading	50%	10%
Writing	60%	30%
Mathematics	30%	20%
Context-Based Subscores:		
Humanities	50%	0%
Social Sciences	30%	10%
Natural Sciences	40%	10%

Content and Item Analysis

The total test made available (not the abbreviated form used by ESU and others) consists of 108 items. These questions are split over three forms of the abbreviated test, which were distributed to students randomly in both the online Freshmen administration and the paper-and-pencil Senior administration. [Appendix A](#) contains an Item Information Report for each class cohort. This is a breakdown of results according to content and exam item. Items are prioritized first by skill area, then by proficiency level to facilitate comparisons and analysis. ESU scores are compared to the overall national percentage of students answering an item correctly. Items in which ESU scored higher than the national average are highlighted in blue in [Appendix A](#).

Table 3 below provides a list of those content areas in which ESU scored above the national average for either Freshmen or Seniors, and Table 4 shows those items where ESU had the greatest negative discrepancy versus national scores. Specifically, it highlights those areas where the difference between the national average and ESU's percentages are the greatest.

Table 3.		ESU Content Strengths		
Type of Content	Skill Area	Prof. Level	% Correct ESU	% Correct National
<i>Freshmen</i>				
Evaluate an argument	Crit. Thinking	III	37.2	36.7
Algebraic expression	Mathematics	I	77.8	60.1
Arithmetic word problem	Mathematics	I	72.1	69.2
Data interp - read information	Mathematics	I	64.1	63.4
Data interp of two related charts - read info	Mathematics	I	60.9	54.5
Number line	Mathematics	I	82.1	75.6
Percent	Mathematics	I	78.2	66
Problems involving exponents - algebraic manip	Mathematics	II	24.4	19.3

Arithmetic word problem - rates	Mathematics	III	38.5	33.7
Exponents	Mathematics	III	22	21.7
Word problem - algebraic expression	Mathematics	III	7.7	5.6
Seniors				
Meaning in context	Reading	I	74	70.3
Recognize incorrect capitalization	Writing	I	86.3	72.7
Recognize incorrect word choice	Writing	I	63.7	58.7
Recognize lack of agreement	Writing	II	82.7	82.3
Arithmetic word problem - percents	Mathematics	I	77.6	61.3
Arithmetic word problem - profit/loss	Mathematics	I	88	78.6
Data interpretation - ratios	Mathematics	I	79	73.4
Data interpretation - read data	Mathematics	I	57	56.6
Number line	Mathematics	I	80.4	79.7
Properties of integers	Mathematics	I	61	59.6
Solve algebraic equation	Mathematics	I	92	88.4
Algebraic word problem - translation	Mathematics	II	52.6	71.2
Arithmetic word problem - rates	Mathematics	II	44.1	43.3
Data interpretation - probability	Mathematics	II	67	59.4
Properties of integers - average	Mathematics	II	57	55.2
Word problem - averages	Mathematics	II	68.6	62.2
Compound interest	Mathematics	III	68	61.3
Word problem - algebraic translation	Mathematics	III	34	33.5
Word problem - sets	Mathematics	III	13.8	9.6

ESU students, both Freshmen and Seniors, demonstrate particular strengths in all levels of mathematical content knowledge and ability compared to national averages.

Table 4.

		ESU Content Weaknesses			
Type of Content	Skill Area	Prof. Level	% Correct ESU	% Correct National	Diff.
Freshmen					
Evaluate hypotheses	Crit. Thinking	III	44.3	64.7	20.4
Meaning in context	Reading	I	45.5	60.7	15.2
Discern primary purpose	Reading	II	35.6	50.8	15.2
Extrapolate from known facts	Crit. Thinking	III	34.2	48.9	14.7
Recognize redundancy	Writing	III	32.9	47.3	14.4
Discern facts from a passage	Reading	I	55	69.1	14.1
Recognize a valid inference	Reading	II	50.4	64.2	13.8
Draw valid conclusions	Crit. Thinking	III	35.6	49.4	13.8
Data interpretation - trends	Mathematics	II	53.6	66.8	13.2

Arithmetic word problem - percent change	Mathematics	III	43.9	56.6	12.7
Seniors					
Algebraic word problem - translation	Mathematics	II	52.6	71.2	18.6
Word problem - algebraic equation	Mathematics	III	29	42.3	13.3
Combine simple clauses	Writing	II	44	56.2	12.2
Exponential growth	Mathematics	III	12.1	22.9	10.8
Linear growth	Mathematics	II	18.2	28.3	10.1
Recast existing sentences	Writing	II	60	69.3	9.3
Recognize redundancy	Writing	III	5	14.2	9.2
Evaluate hypotheses	Crit. Thinking	III	44.3	53.1	8.8
Recognize a valid inference	Reading	II	44.4	52.8	8.4
Determine relevance of information	Crit. Thinking	III	42.1	50.4	8.3
Arithmetic word problem - graduated rate	Mathematics	II	35	43.3	8.3

The data above demonstrate that Freshmen struggle particularly with reading and critical thinking when compared to national averages. Seniors score lower on writing and higher level mathematics when compared to national averages.

Summary of Proficiency Classifications

The skills measured by the ETS Proficiency Profile are grouped into proficiency levels – three for writing, three for mathematics, and three for the combined skill set of reading and critical thinking. Tables 5 and 6 show the percentage of students who are proficient, marginal, and not proficient at each of the proficiency levels for Freshmen and Senior students. A student is classified as marginal when test results do not provide enough evidence to classify the student as either proficient or not proficient. See [Appendix B](#) for more information about these classifications, including a list of specific skills associated with each skill and proficiency level.

Table 5.

Skill Dimension	Freshmen Proficiency Classification Comparison								
	Proficient			Marginal			Not Proficient		
	ESU	PA*	US	ESU	PA*	US	ESU	PA*	US
<i>Reading, Level 1</i>	43%	43%	50%	24%	23%	24%	32%	33%	26%
<i>Reading, Level 2</i>	15%	16%	23%	17%	17%	18%	68%	67%	60%
<i>Critical Thinking</i>	0%	1%	3%	5%	5%	10%	95%	94%	87%
<i>Writing, Level 1</i>	48%	48%	51%	36%	34%	33%	17%	18%	17%
<i>Writing, Level 2</i>	9%	12%	13%	28%	30%	30%	63%	59%	57%
<i>Writing, Level 3</i>	2%	4%	5%	16%	17%	18%	83%	80%	77%
<i>Mathematics, Level 1</i>	29%	41%	43%	34%	29%	28%	36%	30%	29%

<i>Mathematics, Level 2</i>	11%	16%	20%	21%	26%	24%	68%	58%	57%
<i>Mathematics, Level 3</i>	2%	3%	5%	9%	11%	11%	89%	86%	84%

* 10 PASSHE schools were included in this analysis. For a list, see footnote #2.

Table 6.

Senior Proficiency Classification Comparison									
Skill Dimension	Proficient			Marginal			Not Proficient		
	ESU	PA*	US	ESU	PA*	US	ESU	PA*	US
<i>Reading, Level 1</i>	59%	61%	71%	25%	20%	17%	16%	20%	13%
<i>Reading, Level 2</i>	24%	30%	42%	23%	21%	20%	53%	49%	38%
<i>Critical Thinking</i>	2%	4%	8%	9%	14%	21%	89%	83%	71%
<i>Writing, Level 1</i>	59%	61%	67%	32%	27%	24%	9%	12%	9%
<i>Writing, Level 2</i>	14%	18%	23%	39%	37%	37%	46%	45%	40%
<i>Writing, Level 3</i>	4%	6%	10%	22%	25%	28%	74%	69%	62%
<i>Mathematics, Level 1</i>	58%	57%	60%	25%	25%	23%	17%	18%	17%
<i>Mathematics, Level 2</i>	25%	27%	34%	33%	29%	26%	43%	43%	41%
<i>Mathematics, Level 3</i>	4%	6%	10%	14%	17%	19%	82%	77%	72%

* 10 PASSHE schools were included in this analysis. For a list, see footnote #2.

PASSHE data are gathered from an ETS Proficiency Profile Custom Comparative Data Report of Freshmen and Seniors calculated separately, and include mean scores over time from July 2009 through June 2014. US data are for all four-year institution, including Carnegie classifications of Doctoral/Research Universities I and II, Master’s (Comprehensive) Colleges and Universities I and II and Baccalaureate (Liberal Arts) Colleges I and II. Nationwide data was collected between July 2008 and June 2013.

Learning Gains Report

The Learning Gains Report is provided by ETS for every academic year administration. It is part of the Voluntary System of Accountability required measures, and PASSHE uses it to determine a value-added score as part of ESU’s performance funding indicators. Learning gains are reported between Freshmen and Seniors in critical thinking and writing, and are classified between “Well Below Expected³” and “Well Above Expected.” Performance levels are based on the difference in student residual values between seniors and freshmen. These difference scores

³ “Well Below Expected” is more than -2.00 standard errors, while “Well Above Expected” is more than +2.00 standard errors. Other categories include “Below Expected” (between -1.00 and -2.00 standard errors), “At Expected” (between -1.00 and +1.00 standard errors), and “Above Expected” (between +1.00 and +2.00 standard errors).

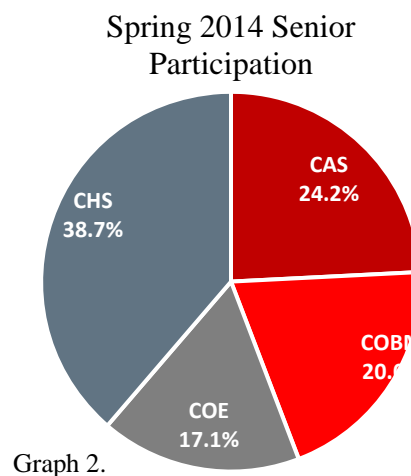
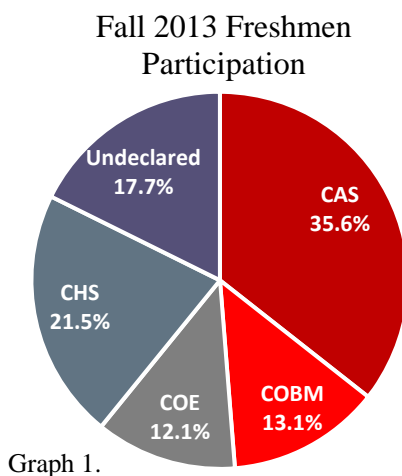
are based on a regression algorithm in which student ability is controlled for using SAT/ACT scores. Actual ETS Proficiency Profile scores are compared to the expected ETS Proficiency Profile scores based on SAT/ACT score. SAT/ACT scores for each student in this analysis were provided to ETS by the institution.

Table 5.		
	Learning Gains 2013-2014	
	Freshmen	Seniors
Critical Thinking	Below Expected	Below Expected
Writing	At Expected	At Expected
Standardized Test Score	975	971

Results of this Learning Gains Report indicate ESU students remain at the same level of achievement as in the previous academic year (2012-2013). Both freshmen and seniors are below expected in performance compared to similar schools when it comes to critical thinking, and at expected levels for both classes in writing. The full Learning Gains Report can be found on ESU’s website [here](#).

Demographics

For the 2013-2014 academic year, 396 qualifying freshmen and 310 qualifying seniors took this exam. Freshmen students were invited to participate in the exam via email invitation from the Office of Institutional Research and Assessment (OIRA). They took the exam online in their own time in an unproctored administration. Seniors participated primarily via faculty volunteering all or part of a given class period to administer the exam in paper-and-pencil form. Requests for accommodation were sent to faculty via email from OIRA throughout the Spring 2014 semester. Graphs 1 and 2 below outline student participation at the college level for each cohort.



When it comes to the Fall 2013 Freshmen cohort, 59.7% of valid participants were female, and the group was 79.3% white. 53% of these incoming freshmen worked at least 1 hour per week. For the Spring 2014 Senior cohort, 60% of participants were female, and the group was 84.9%

white. Approximately one third of the cohort were transfer students, and a majority (72.5%) worked at least 1 hour per week.

Conclusion

These results of the ETS Proficiency Profile should be used to discuss in what General Education skill areas ESU should celebrate student achievement, as well as in what areas improvements can be made. Campus discussion among faculty should begin with a review of the data and findings presented in this report. However, as discussion progresses, the campus should keep in mind that this is only one indicator of students' general education skills, and should be examined with many different kinds of measures. ESU must strive not only to improve our students' learning and growth, but to ensure that all assessments conducted are as valid and reliable as possible.

It is recommended that these data be used to stimulate dialogue across campus about the curriculum and pedagogy surrounding these topics. Academic departments and faculty should reflect on whether these scores are congruent with the knowledge, skills, and abilities students demonstrate in the classroom. In addition, when looking at the item/content information in tables 3 and 4 above and in Appendix A, faculty may find it helpful to determine if their department or program is teaching the type of content listed. Finally, ESU encourages the development of action plans to respond to the findings of this report if they are deemed appropriate. The Office of Institutional Research and Assessment welcomes any questions faculty and administration may have about the ETS Proficiency Profile and/or the results presented herein.

Appendix A. Item Information Report – Freshmen

(National Percentages based on Comparative Data population for this form. Data ranges in date from July 2008 thru June 2013.)

Freshmen Item Information Report (n = 379)					
Type of Content	Number of Questions	Skill Area	Proficiency Level	% Correct Institution	% Correct National
Determine meaning in context	1	Reading	I	89.1	94.4
Discern facts from a passage	4	Reading	I	55	69.1
Meaning in context	1	Reading	I	45.5	60.7
Recognize explicit information	9	Reading	I	52.3	60.9
Discern primary purpose	2	Reading	II	35.6	50.8
Discern purpose of a reference	3	Reading	II	54.5	62.9
Recognize a valid inference	7	Reading	II	50.4	64.2
Determine relevance of information	7	Critical Thinking	III	31.5	41.4
Draw valid conclusions	3	Critical Thinking	III	35.6	49.4
Evaluate an argument	1	Critical Thinking	III	37.2	36.7
Evaluate data for consistency	1	Critical Thinking	III	45.5	52.2
Evaluate hypotheses	2	Critical Thinking	III	44.3	64.7
Evaluate interpretive claims	1	Critical Thinking	III	47.4	48.2
Extrapolate from known facts	6	Critical Thinking	III	34.2	48.9
Recognize a valid inference	1	Critical Thinking	III	42.7	50.3
Recognize an assumption	5	Critical Thinking	III	46.2	58.9
Order sentences in a paragraph	3	Writing	I	44	46.5
Recognize agreement	2	Writing	I	75.6	79.7
Recognize grammatical correction	1	Writing	I	71.7	73.8
Recognize grammatical error	1	Writing	I	26.8	29.2
Recognize incorrect word choice	1	Writing	I	66.5	67
Incorporate new material	3	Writing	II	60.7	70.9
Organize for coherence/rhetorical effect	2	Writing	II	57.6	63.4

Recast an existing sentence	5	Writing	II	65.4	68.6
Organize writing into larger units	1	Writing	III	81.9	85.4
Recognize correct construction	5	Writing	III	55.2	61.0
Recognize most effective revision	2	Writing	III	63.0	70.3
Recognize redundancy	1	Writing	III	32.9	47.3
Algebraic expression	1	Mathematics	I	77.8	60.1
Arithmetic word problem	1	Mathematics	I	72.1	69.2
Arithmetic word problem - non routine	1	Mathematics	I	66.7	68.7
Arithmetic word problem - work units	1	Mathematics	I	91	94.8
Data interpretation - read information	3	Mathematics	I	64.1	63.4
Data interpretation of two related charts - read info	1	Mathematics	I	60.9	54.5
Number line	1	Mathematics	I	82.1	75.6
Percent	1	Mathematics	I	78.2	66
Algebraic problem - embedded ratios	1	Mathematics	II	54.8	61.3
Algebraic word problem - translation	1	Mathematics	II	67.3	73.7
Arithmetic word problem - average	1	Mathematics	II	63.3	64.7
Data interpretation - trends	1	Mathematics	II	53.6	66.8
Problems involving exponents - algebraic manipulation	1	Mathematics	II	24.4	19.3
Translation to algebraic expression	3	Mathematics	II	44.5	53.4
Arithmetic word problem - percent change	1	Mathematics	III	43.9	56.6
Arithmetic word problem - percent of a percent	1	Mathematics	III	41.7	44.4
Arithmetic word problem - rates	1	Mathematics	III	38.5	33.7
Data interpretation - arithmetic calculation	1	Mathematics	III	78.1	83.8
Data interpretation and inference	1	Mathematics	III	15.4	22.2
Exponents	1	Mathematics	III	22	21.7
Interpretation of graphs	1	Mathematics	III	32.7	43.2
Percent change - ratio and proportion	1	Mathematics	III	14.6	16.4

Word problem - algebraic expression	1	Mathematics	III	7.7	5.6
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Appendix A Continued. Item Information Report – Seniors

(National Percentages based on Comparative Data population for this form. Data ranges in date from July 2008 thru June 2013.)

Senior Item Information Report (n = 302)					
Type of Content	Number of Questions	Skill Area	Proficiency Level	% Correct Institution	% Correct National
Discern facts from a passage	12	Reading	I	58.5	63.5
Meaning in context	1	Reading	I	74	70.3
Discern primary purpose	6	Reading	II	53.7	55.1
Recognize a valid inference	8	Reading	II	44.4	52.8
Determine relevance of information	8	Critical Thinking	III	42.1	50.4
Evaluate an argument	3	Critical Thinking	III	50.8	55.1
Evaluate data for consistency	4	Critical Thinking	III	40.2	46.1
Evaluate hypotheses	3	Critical Thinking	III	44.3	53.1
Evaluate interpretations	6	Critical Thinking	III	47.7	51.2
Evaluate interpretive claims	1	Critical Thinking	III	50	51.5
Recognize assumptions	2	Critical Thinking	III	41.1	46.6
Recognize agreement	5	Writing	I	82.6	83.2
Recognize appropriate transition	1	Writing	I	51	55.5
Recognize appropriate transitions	1	Writing	I	54	57.5
Recognize incorrect capitalization	1	Writing	I	86.3	72.7
Recognize incorrect word choice	1	Writing	I	63.7	58.7
Combine simple clauses	1	Writing	II	44	56.2
Incorporate new material	3	Writing	II	49	52.7
Recast existing sentences	2	Writing	II	60	69.3
Recognize lack of agreement	3	Writing	II	82.7	82.3
Recognize appropriate idiom	1	Writing	III	88.2	90.7
Recognize correct construction	3	Writing	III	71.1	74.3
Recognize most effective revision	4	Writing	III	66	68.4
Recognize redundancy	1	Writing	III	5	14.2

Apply formula	1	Mathematics	I	66	71
Arithmetic word problem - percents	1	Mathematics	I	77.6	61.3
Arithmetic word problem - profit/loss	1	Mathematics	I	88	78.6
Data interpretation - bar chart	1	Mathematics	I	67.6	75.5
Data interpretation - ratios	1	Mathematics	I	79	73.4
Data interpretation - read data	1	Mathematics	I	57	56.6
Number line	1	Mathematics	I	80.4	79.7
Properties of integers	1	Mathematics	I	61	59.6
Solve algebraic equation	1	Mathematics	I	92	88.4
Algebraic word problem - translation	1	Mathematics	II	52.6	71.2
Arithmetic word problem - graduated rate	1	Mathematics	II	35	43.3
Arithmetic word problem - rates	1	Mathematics	II	44.1	43.3
Data interpretation - probability	1	Mathematics	II	67	59.4
Draw conclusion from algebraic equations	1	Mathematics	II	55	61.7
Linear growth	1	Mathematics	II	18.2	28.3
Properties of integers - average	1	Mathematics	II	57	55.2
Word problem - averages	1	Mathematics	II	68.6	62.2
Word problem - similar triangles	1	Mathematics	II	46	50.3
Compound interest	1	Mathematics	III	68	61.3
Data interpretation - percent change	1	Mathematics	III	10	11.5
Exponential growth	1	Mathematics	III	12.1	22.9
Interpretation of graphs	1	Mathematics	III	35.4	39.1
Properties of integers - modular arithmetic	1	Mathematics	III	56.9	60.5
Word problem - algebraic equation	1	Mathematics	III	29	42.3
Word problem - algebraic translation	1	Mathematics	III	34	33.5
Word problem - percent of percent	1	Mathematics	III	34.3	35.7
Word problem - sets	1	Mathematics	III	13.8	9.6

Appendix B. Explanation of Proficiency Classifications

Excerpted directly from the ETS Proficiency Profile Users Guide, pages 9-11

http://www.ets.org/s/proficiencyprofile/pdf/Users_Guide.pdf

Proficiency Levels

The skills measured by the ETS Proficiency Profile test are grouped into three skill areas:

- Reading and critical thinking
- Writing
- Mathematics

Within each of these three skill areas, the specific skills tested by the ETS Proficiency Profile test are classified into three *proficiency levels*, identified simply as **Level 1**, **Level 2**, and **Level 3**. Each proficiency level is defined in terms of a set of specific competencies expected of students.

Skills Tested at Each Level

Reading and Critical Thinking

To be considered proficient at **Level 1**, a student should be able to:

- Recognize factual material explicitly presented in a reading passage
- Understand the meaning of particular words or phrases in the context of a reading passage

To be considered proficient at **Level 2**, a student should be able to:

- Synthesize material from different sections of a passage
- Recognize valid inferences derived from material in the passage
- Identify accurate summaries of a passage or of significant sections of the passage
- Understand and interpret figurative language
- Discern the main idea, purpose, or focus of a passage or a significant portion of the passage

To be considered proficient at **Level 3 (Critical Thinking)**, a student should be able to:

- Evaluate competing casual explanations
- Evaluate hypothesis for consistency with known facts
- Determine the relevance of information for evaluating an argument or conclusion
- Determine whether an artistic interpretation is supported by evidence contained in a work
- Recognize the salient features or themes in a work of art
- Evaluate the appropriateness of procedures for investigating a question of causation
- Evaluate data for consistency with known facts, hypotheses or methods

Writing

To be considered proficient at **Level 1**, a student should be able to:

- Recognize agreement among basic grammatical elements (e.g., nouns, verbs, pronouns and conjunctions)
- Recognize appropriate transition words
- Recognize incorrect word choice
- Order sentences in a paragraph
- Order elements in an outline

To be considered proficient at **Level 2**, a student should be able to:

- Incorporate new material into a passage
- Recognize agreement among basic grammatical elements (e.g., nouns, verbs, pronouns and conjunctions) when these elements are complicated by intervening words or phrases
- Combine simple clauses into single, more complex combinations
- Recast existing sentences into new syntactic combinations

To be considered proficient at **Level 3**, a student should be able to:

- Discriminate between appropriate and inappropriate use of parallelism
- Discriminate between appropriate and inappropriate use of idiomatic language
- Recognize redundancy
- Discriminate between correct and incorrect constructions
- Recognize the most effective revision of a sentence

Mathematics

To be considered proficient at **Level 1**, a student should be able to:

- Solve word problems that would most likely be solved by arithmetic and do not involve conversion of units or proportionality (These problems can be multi-step if the steps are repeated rather than embedded.)
- Solve problems involving the informal properties of numbers and operations, often involving the Number Line, including positive and negative numbers, whole numbers and fractions (including conversions of common fractions to percent, such as converting $\frac{1}{4}$ to 25%)
- Solve problems requiring a general understanding of square roots and the squares of numbers
- Solve a simple equation or substitute numbers into an algebraic expression
- Find information from a graph (This task may involve finding a specified piece of information in a graph that also contains other information.)

To be considered proficient at **Level 2**, a student should be able to:

- Solve arithmetic problems with some complications, such as complex wording, maximizing or minimizing and embedded ratios (these problems include algebra problems that can be solved by arithmetic [the answer choices are numeric])
- Simplify algebraic expressions, perform basic translations and draw conclusions from algebraic equations and inequalities (these tasks are more complicated than solving a simple equation, though they may be approached arithmetically by substituting numbers.)
- Interpret a trend represented in a graph, or choose a graph that reflects a trend

- Solve problems involving sets (the problems would have numeric answer choices.)

To be considered proficient at **Level 3**, student should be able to:

- Solve word problems that would be unlikely to be solved by arithmetic; the answer choices are either algebraic expressions or are numbers that do not lend themselves to back-solving
- Solve problems involving difficult arithmetic concepts such as exponents and roots other than squares and square roots and percent of increase or decrease
- Generalize about numbers, e.g., identify the values of (x) for which an expression increases as (x) increases
- Solve problems requiring an understanding of the properties of integers, rational numbers, etc.
- Interpret a graph in which the trends are to be expressed algebraically or in which one of the following is involved: exponents and roots other than squares and square roots, percent of increase or decrease
- Solve problems requiring insight or logical reasoning