Essential Adult Skills Initiative 2016/2017

Fleming College

Overview of Incoming and Graduating Student Results, Spring 2017

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If you have any questions or would like to know how to replicate these results, please do not hesitate to contact Sarah Brumwell, Senior Researcher at sbrumwell@heqco.ca or 416-212-5243.

Remarks

Nearly two years ago, HEQCO embarked on an ambitious pilot project to test the feasibility of using the Education and Skills Online (ESO) tool to assess the literacy, numeracy, and problem solving skills of entering and graduating students across Ontario. With eleven colleges, nine universities and one out-of-province university by our side, we began to work with each partner to test how to orchestrate this project on a provincial scale. HEQCO views this project as critical to achieving one of our long-term goals – to have every Ontario postsecondary institution annually identify, evaluate and publicly report the skills and competencies its students have achieved.

Your institutional commitment to EASI and the assessment of learning outcomes has laid the foundation for future efforts to rigorously evaluate and measure skill development using assessments like the ESO. This path was not easy, but we learned a few lessons along the way.

- **Student Recruitment** – We experimented with different recruitment incentives and methods to encourage students to take the ESO. These included online Amazon gift card financial incentives; access to Paddle, an interactive career exploration platform; opportunities to take the assessment in large computer labs; customized emails from program leads; and friendly reminders through your institution's learning management system (LMS).

  It is not easy to entice students to participate in assessment initiatives, despite the available incentives and a user-friendly registration/troubleshooting system. Yet, we still learned that students care about understanding their skills. We also learned that with the right incentives in place, we can reach graduating students.

- **Sampling** – Each partner was open to new ideas and was generally able to accommodate sending out invitations to students in as many programs as possible. Despite this flexibility, we did not reach the sample size at individual colleges that would have allowed us to assess with confidence changes in literacy, numeracy and problem solving skills from the time students begin their programs to the time they graduate. We know it is seductive to try to over-interpret the data. But we urge caution in interpreting the data for your institution and especially in making comparisons to the aggregate dataset once it becomes available.

A key lesson learned is that the best way to confidently measure skills development over time and the value-added of college programs in the tested skill domains is by embedding these types of assessments in-class and making them a routine part of a student's postsecondary experience. This trial so far shows that this can be done. And, we remind that the goal of this demonstration project is ultimately, as we have said from the beginning, to make these measurements routine in the entire Ontario postsecondary system.

Through this pilot, we have also identified and resolved important logistical and methodological issues that needed to be addressed regarding student recruitment, test administration, data management and so on — issues that are important as we consider scaling up the test to a provincial or national level. At this point, we are confident that we have a system and a set of processes in place that allow us to scale up the project to whatever level we wish.

Finally, we would like to highlight your commitment to this project as a valuable partner, as well as your commitment to the assessment of learning outcomes. Through EASI, we have collectively created an efficient system for working closely with our institutional partners to manage testing at multiple sites with diverse needs. We remain convinced, as we have argued before, that measuring the skills of postsecondary students is critical, and look forward to continually working with you to address this critical gap.

EASI Results for Fleming College

The following provides a basic overview of the Education and Skills Online (ESO) results for participating incoming first-year and graduating final year students from Fleming College. The data for both groups are presented together for illustrative purposes only. Because of the small sample size, comparisons between incoming and graduating students produce misleading results and should not be made. This is also true for the aggregate college results.

Demographics

In all, 66 first year and 82 final year students from Fleming College provided usable assessment results. These counts include students who completed either the entire assessment (57 first year and 80 final year students[1]) or at the very least, the literacy and numeracy components (9 first year and 2 final year students). Table 1 summarizes the characteristics of these students, using a combination of institutional administrative data and responses to the background questionnaire portion of the Education and Skills Online assessment. As noted previously, there are substantial differences in the profiles of the two samples, especially at the institutional level where samples are even smaller, underscoring the need to avoid making any comparisons. Data used in subsequent analyses stems from students who completed all sections of the ESO and those who completed all sections except problem solving and, i.e., provided useable core data.

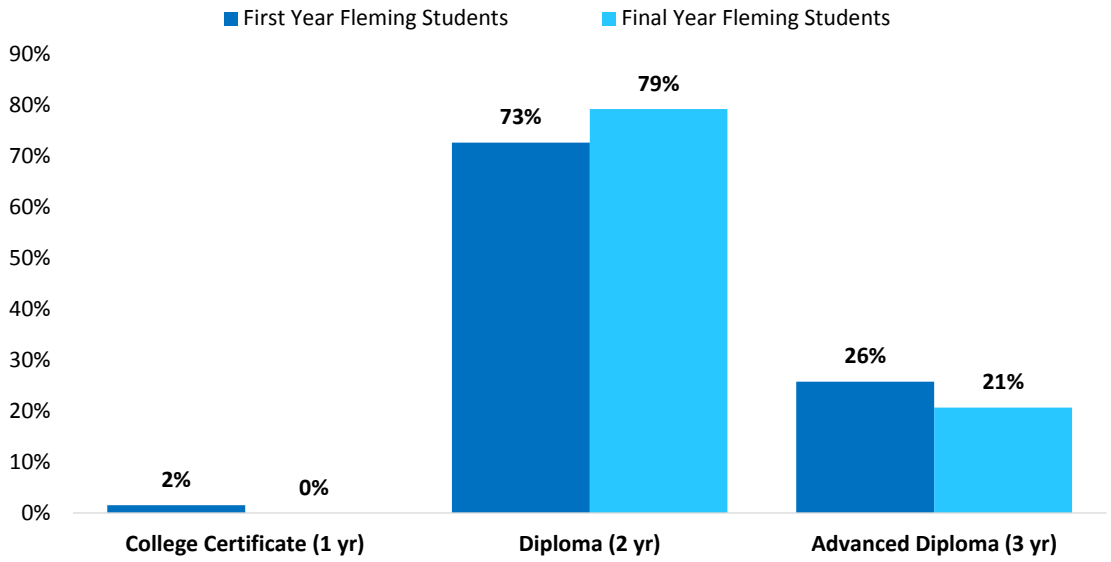
Table 1. Overview of characteristics for first and final year Fleming students.

	Variable	First Year Fleming Students	Final Year Fleming Students
Background Questionnaire	Number of students with usable data	66	82
	Median Age	20	22
	% Female	42%	50%
	% Born in Canada	80%	93%
	% English as first language	88%	94%
	% Employed	31%	48%
Administrative Data	% Indirect entry	70%	76%
	% International	8%	2%
	% Enrolled in Applied Arts	29%	29%
	% Enrolled in Business/Commerce	20%	11%
	% Enrolled in Technology	41%	49%
	% Enrolled in Health Sciences	11%	11%

[1] 1 final year student completed the assessment but did not pass the General Orientation for literacy and numeracy. This student did not receive scores for the ESO literacy and numeracy components. They are considered as having completed the assessment since test-takers who fail the General Orientation are only required to complete the reading components subtest, which they did. This student is included in Table 1 and Figure 1 but is excluded from the figures in the *Performance* section of this report.

Figure 1 displays the first and final year Fleming students who provided usable EASI data as proportions, by the type of credential they will receive upon graduation.

Figure 1. Proportion of first and final year Fleming students who provided usable EASI results, by credential.



Performance

Students receive a numeric score (rounded to the nearest 10 points) for their performance on each of the three ESO components: literacy, numeracy and problem solving in technology-rich environments (PS-TRE). Though the scale runs from 0 to 500, no test-taker receives a score below 150 or above 400 as the extreme ends of the scale are less precise. These scores correspond to a series of proficiency levels, which are to be used for descriptive purposes only and have no normative element. For more information about the scores and corresponding levels for the ESO's literacy, numeracy and PS-TRE components please consult the *EASI Education and Skills Online Data Handbook & Scoring Guide*.

Students included in the following analyses completed at minimum the ESO literacy and numeracy components of the assessment. 1 final year student completed the assessment but did not pass the General Orientation for literacy and numeracy (*see Footnote 1*). This student is excluded from the figures in this section as their low scores prevented them from completing any of the three ESO components.

Literacy

The figures below provide a summary of Fleming students' literacy performance. Figures 2a and 2b show the mean literacy scores for first year and final year Fleming students relative to comparators from PIAAC 2012. Figures 2c and 2d show the distribution of literacy levels attained by first and final year Fleming students.

Figure 2a. Average literacy scores – First year Fleming students relative to PIAAC 2012 results for 16-24 year olds whose highest credential is a high school diploma.

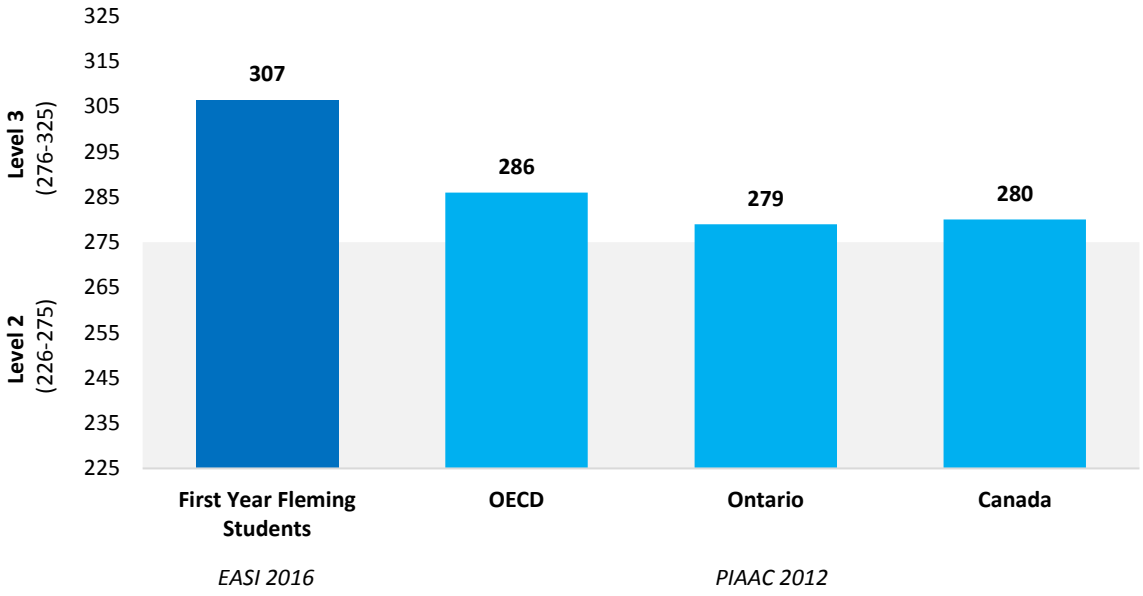


Figure 2b. Final year Fleming students relative to PIAAC 2012 results for 16-24 year olds whose highest credential is postsecondary education – below a bachelor's degree.

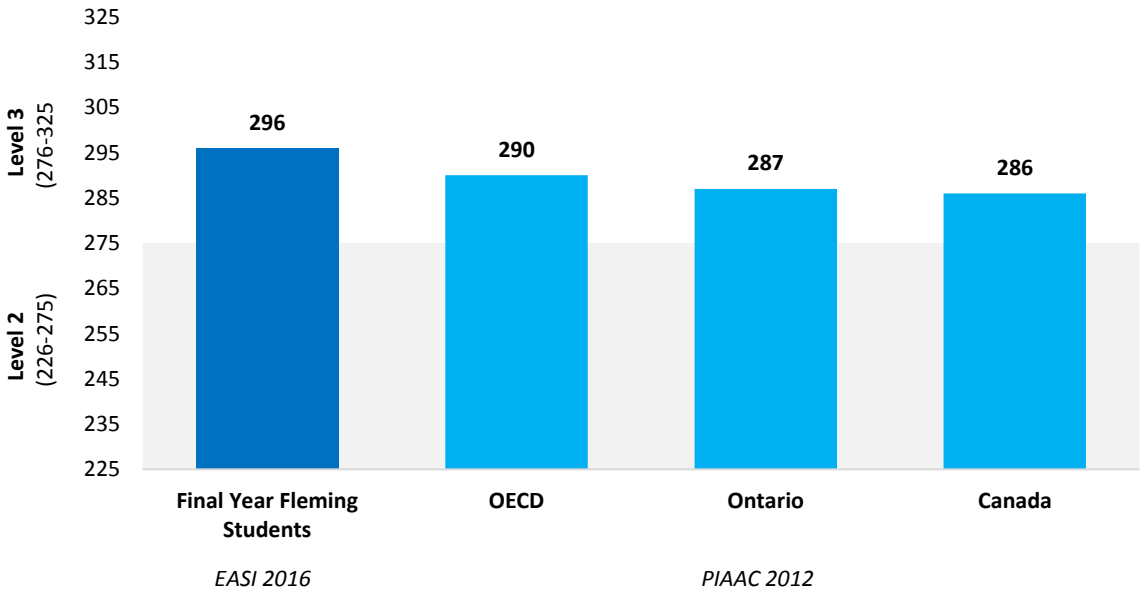


Figure 2c. Distribution of literacy scores – First year Fleming students.

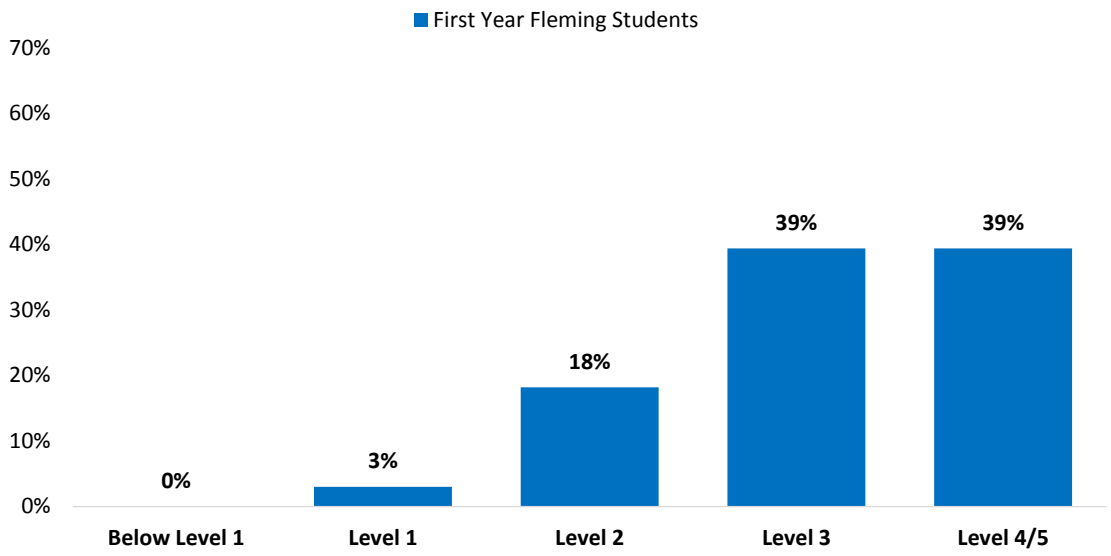
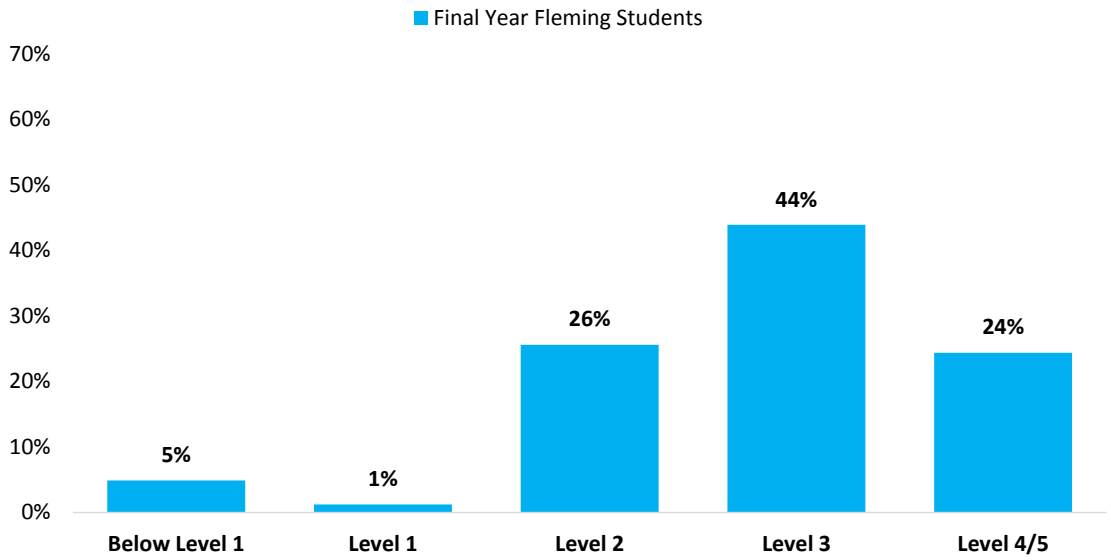


Figure 2d. Distribution of literacy scores – Final year Fleming students.



Numeracy

The figures below provide a summary of first and final year Fleming students' numeracy performance. Figures 3a and 3b show the mean numeracy scores for first year and final year Fleming students relative to comparators from PIAAC 2012. Figures 3c and 3d show the distribution of numeracy levels attained by first and final year Fleming students.

Figure 3a. Average numeracy scores – First year Fleming students relative to PIAAC 2012 results for 16-24 year olds whose highest credential is a high school diploma.

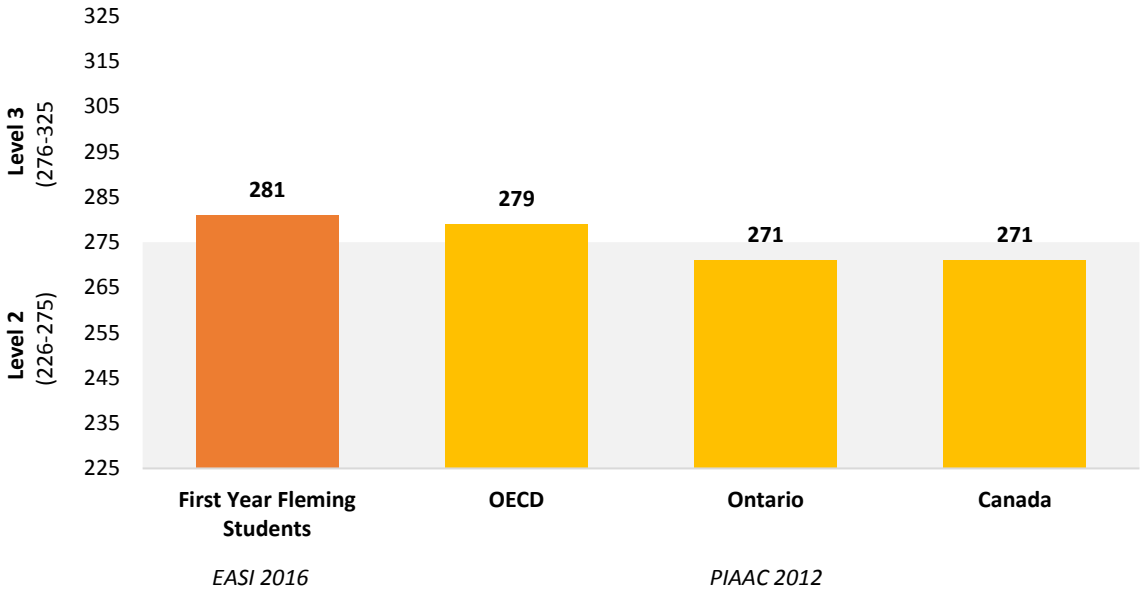


Figure 3b. Average numeracy scores – Final year Fleming students relative to PIAAC 2012 results for 16-24 year olds whose highest credential is postsecondary education – below a bachelor's degree.

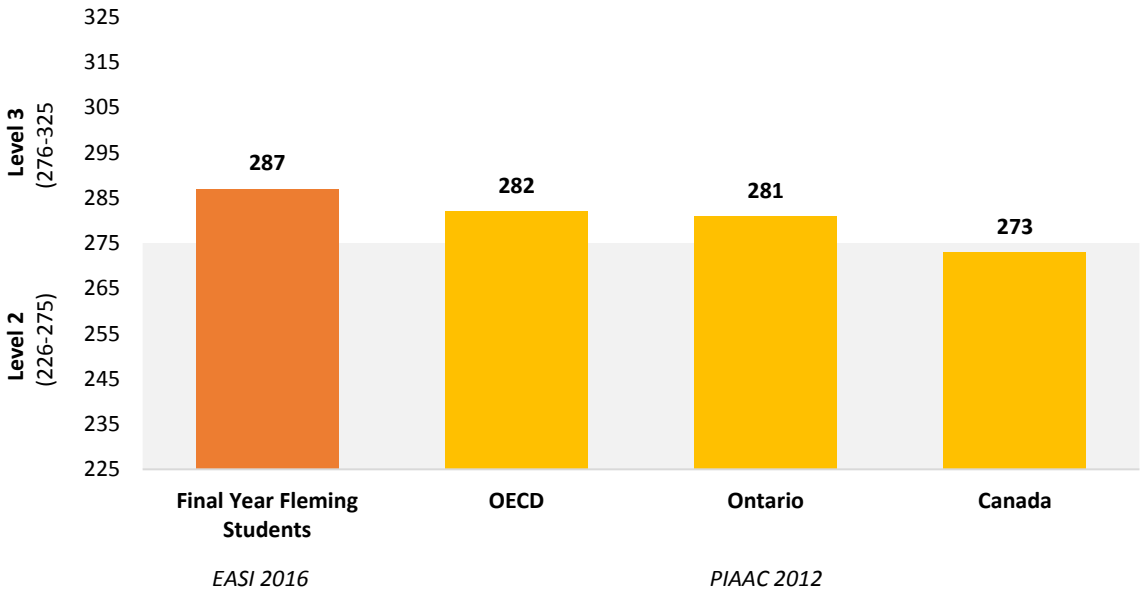


Figure 3c. Distribution of numeracy scores – First year Fleming students.

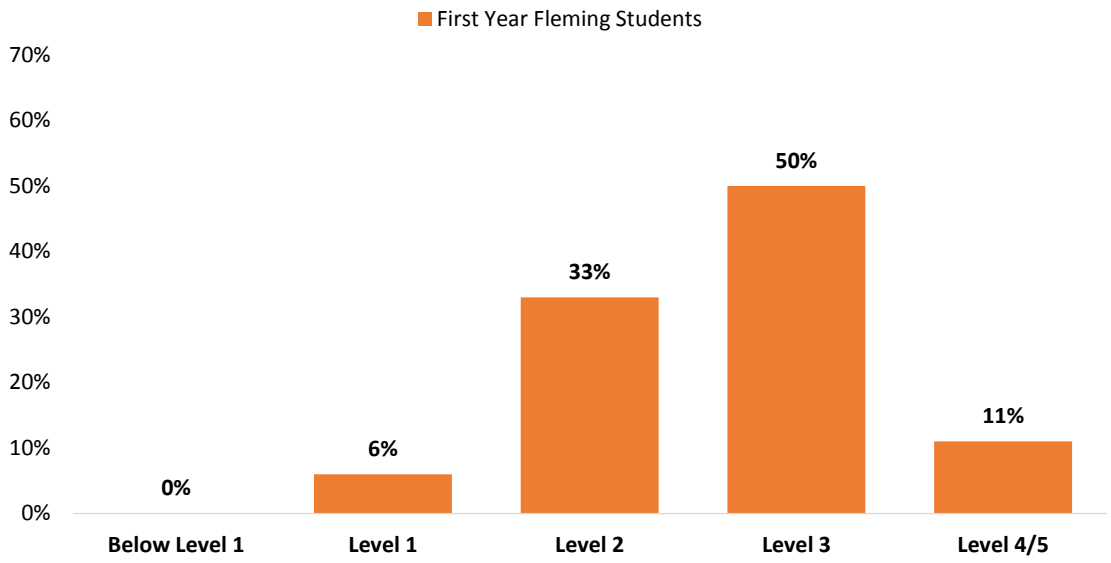
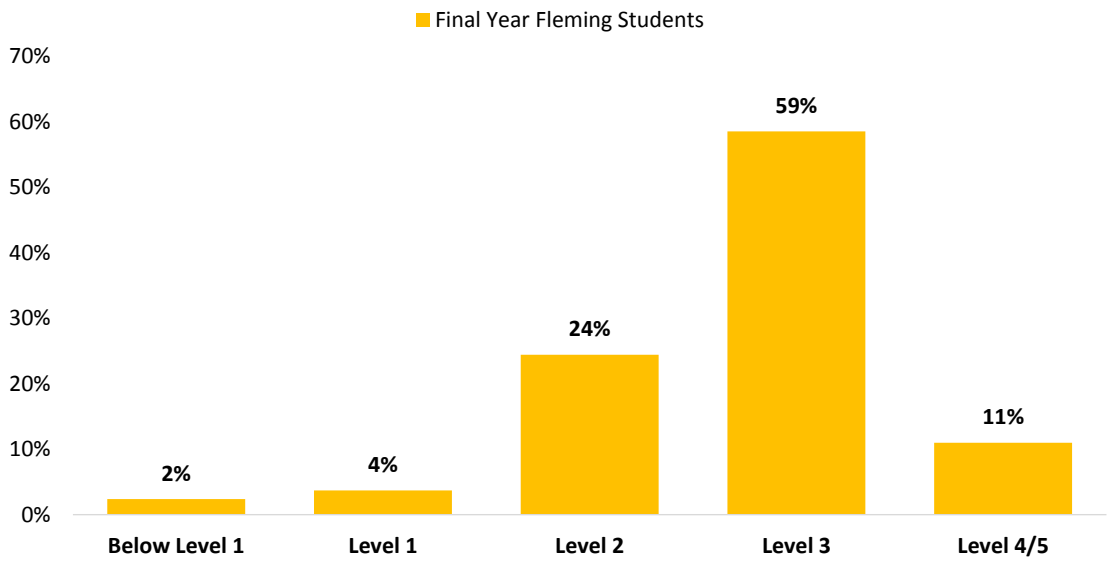


Figure 3d. Distribution of numeracy scores – Final year Fleming students.



Problem Solving in Technology-Rich Environments

The number of students included in Figures 2 and 3 is larger than the number of students included in Figure 4. This is because not all of the students who completed the literacy and numeracy components of the assessment went on to the problem solving in technology-rich environments (PS-TRE) portion. Some students scored too low on the literacy component to have the option to take PS-TRE, while others seem to have abandoned the assessment partway. Only students who score 200 and above on the literacy component of the ESO are directed to complete the PS-TRE component.

Figures 4a and 4b show the distribution of PS-TRE levels for first and final year Fleming students. Comparative average scores from PIAAC 2012 are not available because the OECD and Statistics Canada report PS-TRE scores by proficiency levels alone.

Figure 4a. Distribution of PS-TRE scores – First year Fleming students (n=57)

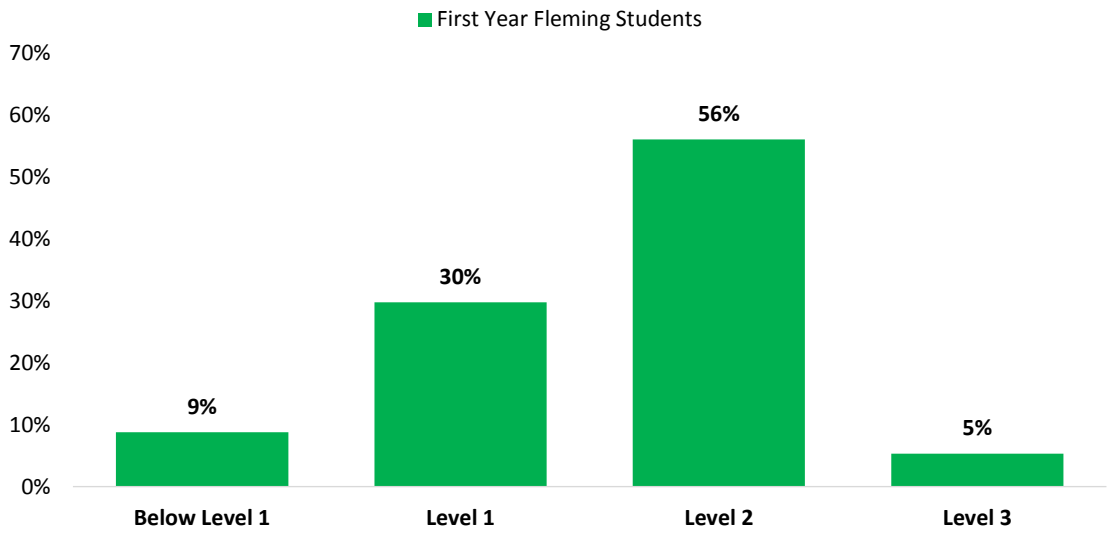
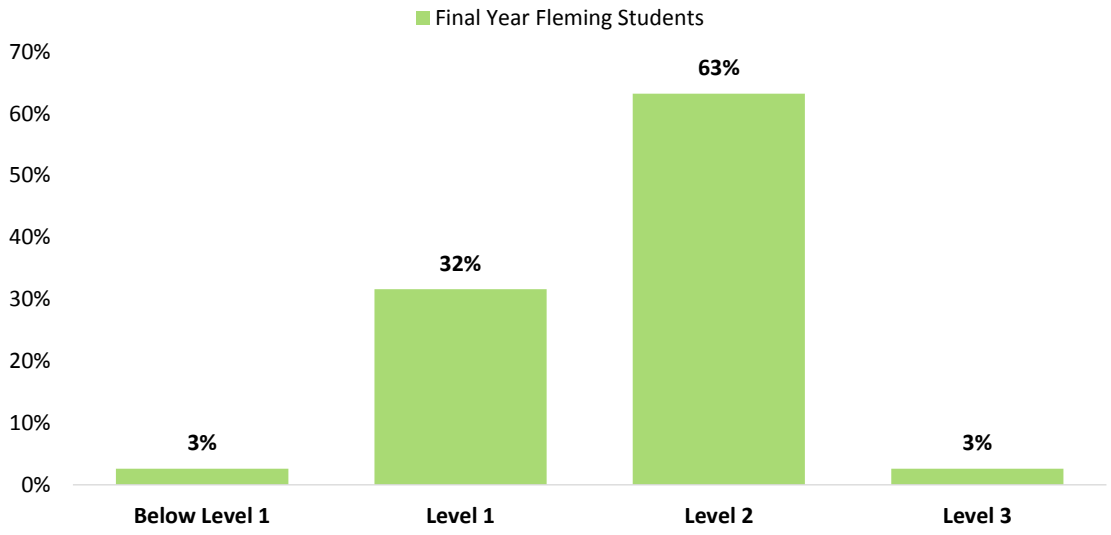


Figure 4b. Distribution of PS-TRE scores – Final year Fleming students (n=76)



Notes

This document is for internal use **only**. Please do not publish the contents of this report or share its contents with people outside of your organization. Once the full pilot has been completed in the Fall 2017, we will share with you the de-identified, aggregate-level college data.

If you have any questions or would like to know how to replicate these results, please do not hesitate to contact Sarah Brumwell, Senior Researcher at sbrumwell@heqco.ca or 416-212-5243.

For details on how to compare EASI results to PIAAC 2012 scores, please see "Benchmarking based on PIAAC 2012 Scores within Canada" in the *EASI Data Handbook and Scoring Guide*.

To view the PIAAC 2012 results for Canada, please see the following sources:

Statistics Canada. 2013. *Skills in Canada: First Results from the Programme for the International Assessment of Adult Competencies (PIAAC)*. Statistics Canada Catalogue no. 89-555-X. Retrieved from http://www.statcan.gc.ca/pub/89-555-x/89-555-x2013001-eng.htm .

Statistics Canada & Council of Ministers of Education, Canada. 2013. "Table D5a Literacy — Average scores with 0.95 confidence interval and scores at 5th, 25th, 75th, and 95th percentiles of population aged 16 to 65, by highest level of completed education and age group, OECD average, Canada, provinces and territories, 2012" (table) and "Table D5b Numeracy — Average scores with 0.95 confidence interval and scores at 5th, 25th, 75th, and 95th percentiles of population aged 16 to 65, by highest level of completed education and age group, OECD average, Canada, provinces and territories, 2012" (table). Annex D. *Skills in Canada: First Results from the Programme for the International Assessment of Adult Competencies (PIAAC)*. Toronto: Council of Ministers of Education, Canada. Retrieved from http://www.piaac.ca/docs/PIAAC2013/Annex-D_new-tablesEN.pdf .