



Data Report 4

Learner Speed

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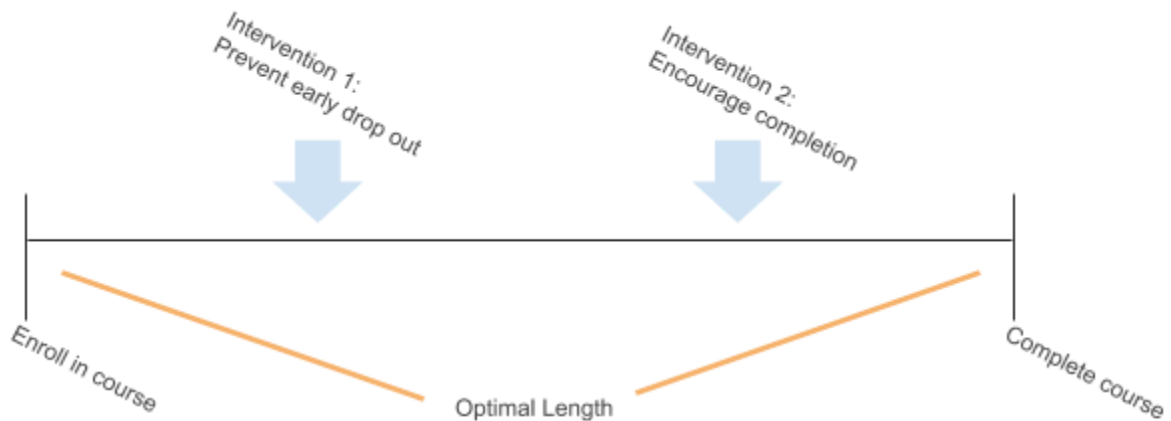
SUMMARY

This report looks at the amount of time spent on Saylor Academy classes among both complete course engagements (i.e. course enrollments that led to a course completion as of the data download date) and incomplete course engagements (i.e. course enrollments that did not lead to a course completion as of the download date). The results provide timeframes during which Saylor can encourage continued engagement in a course, as well as a general sense of the length of courses Saylor students are willing to tolerate.

INTRODUCTION

Understanding learners' speed of completion and continued engagement is important for understanding to what extent and in what ways learners are interacting with courses. If we know the pace at which learners are using the course, then we can use this information to target students at points in time when they are particularly susceptible to dropping off. There is also opportunity to gauge the attention span of students and use this information as a supplementary factor for dictating course, unit, and/or topic length (though always deferring to the judgement of our subject matter experts).

Diagram of Topics of Interest



SAMPLE

The sample includes all new enrollments in any course on learn.saylor.org from January 1, 2017 to September 30, 2017 (9 months) for which completion tracking is enabled. That amounts to 38,322 data points.

METHOD AND RESULTS

First, I have provided some numbers of interest for all course engagements, both complete and incomplete; just complete course engagements; and just incomplete course engagements. It should be noted that these durations are based on when students first enroll in the course. Students do not need to enroll in the course to gain access to content. Therefore, students may have interacted with the class before actually enrolling.

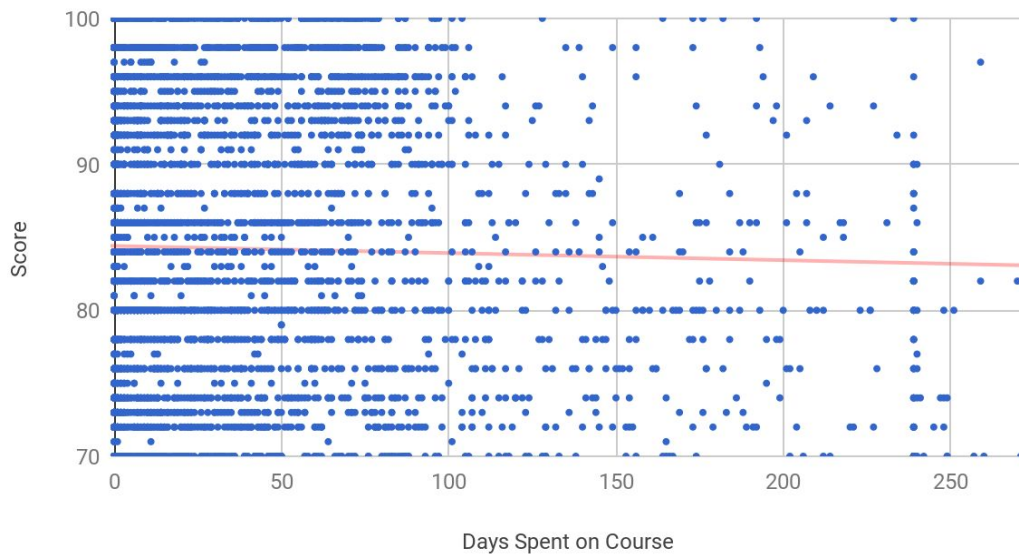
Quick Facts

Among both completed and incompletd course engagements	
Total number of course enrollments	38,322
Total number of course enrollments where student spent at least 1 day on course	16,896
Average days spent on course among first 10,000 enrollments*	17.2
Among completed course engagements	
Total number of course enrollments	5,191
Total number of course enrollments where student spent at least 1 day on course	3,502
Average days spent on course among all completions	31.4
Among incompletd course engagements	
Total number of course enrollments	33,133
Total number of course enrollments where student spent at least 1 day on course	13,396
Average days spent on course among first 10,000 enrollments*	15.85

*The first 10,000 course enrollments were chosen to exclude students who did not have enough time to exhaust their total potential investment in the course.

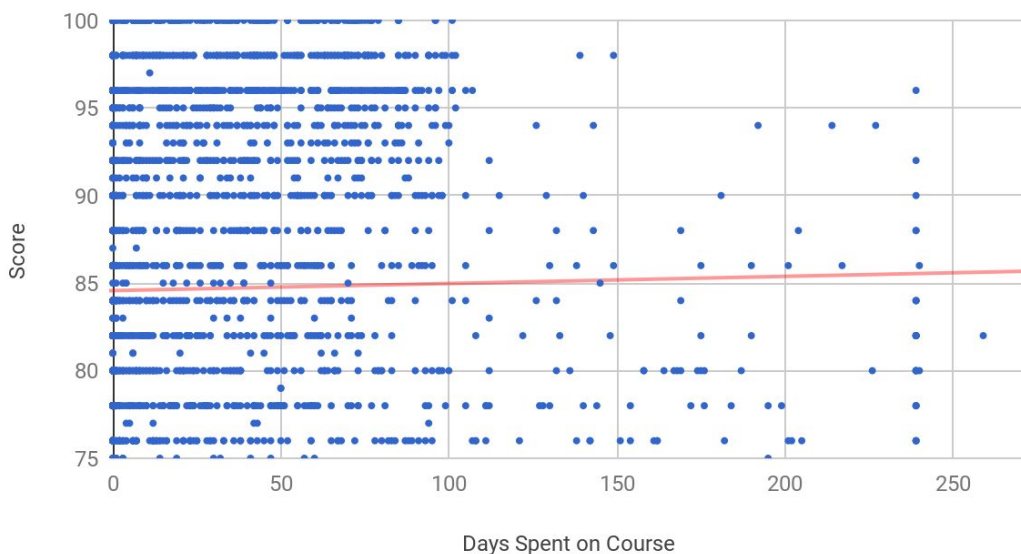
Among all student engagements, given sufficient time to explore the course, students spent an average of 17 days before either finishing the course or abandoning it and not returning. In contrast, on average, students who completed a course did so in 31 days, or approximately one month, and students who chose to never return did so so at day 16. It should be noted that there is no notable appreciation or depreciation in the scores of students who completed the course with time spent on the course, per the trend line below (red).

Scores of Students Among Completions



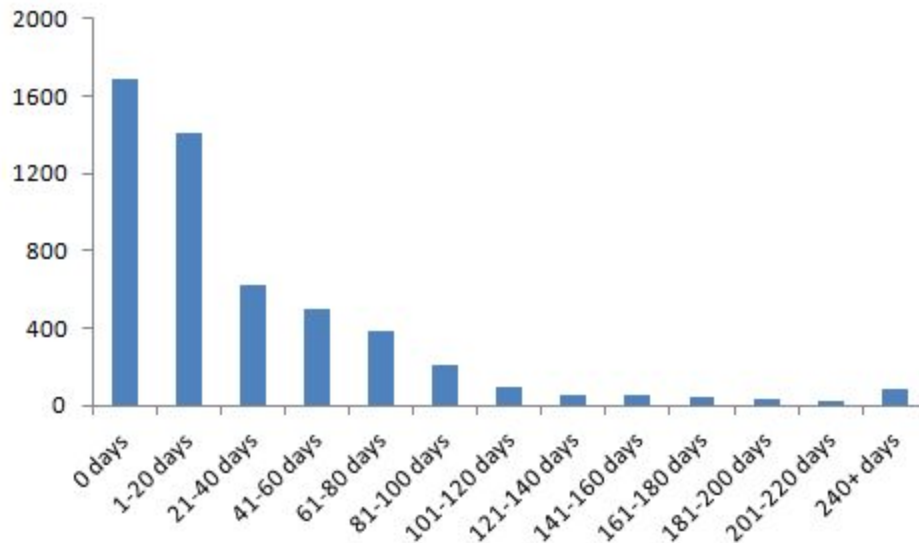
This graph preliminarily indicates that quick finishers are not necessarily rushing through courses to the detriment of knowledge gained but rather have different objectives (e.g., they already had knowledge of the subject and wanted to complete the course quickly as proof of knowledge). Still, not all courses are made equally, and a large amount of quick learners might also be engaged in quick and easy courses. Therefore, I plotted the same graph for just CS and BUS courses. There is a slight change in the trend line, but the results are essentially the same.

Scores of Students Among Business and Computer Science Completions



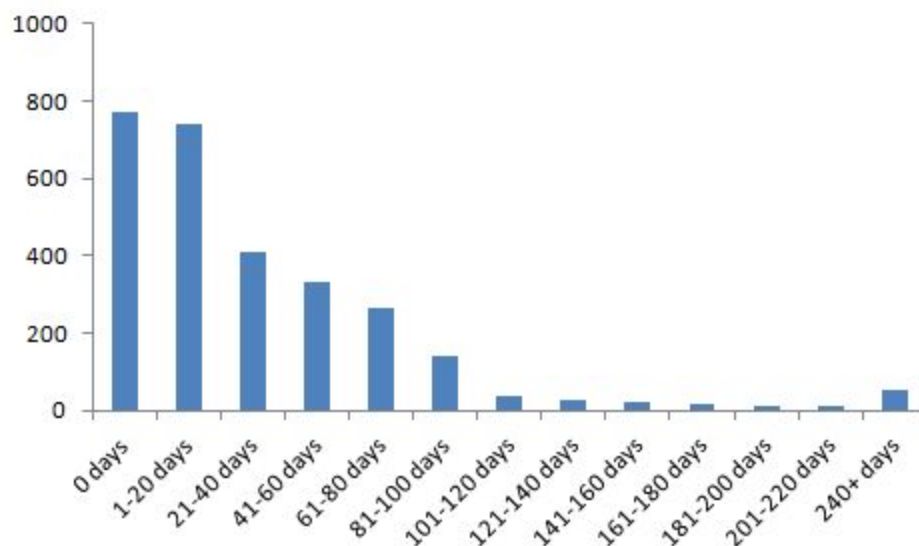
To understand how long students are taking to complete the courses, we can also visualize the results as histograms.

Histogram for all complete course engagements



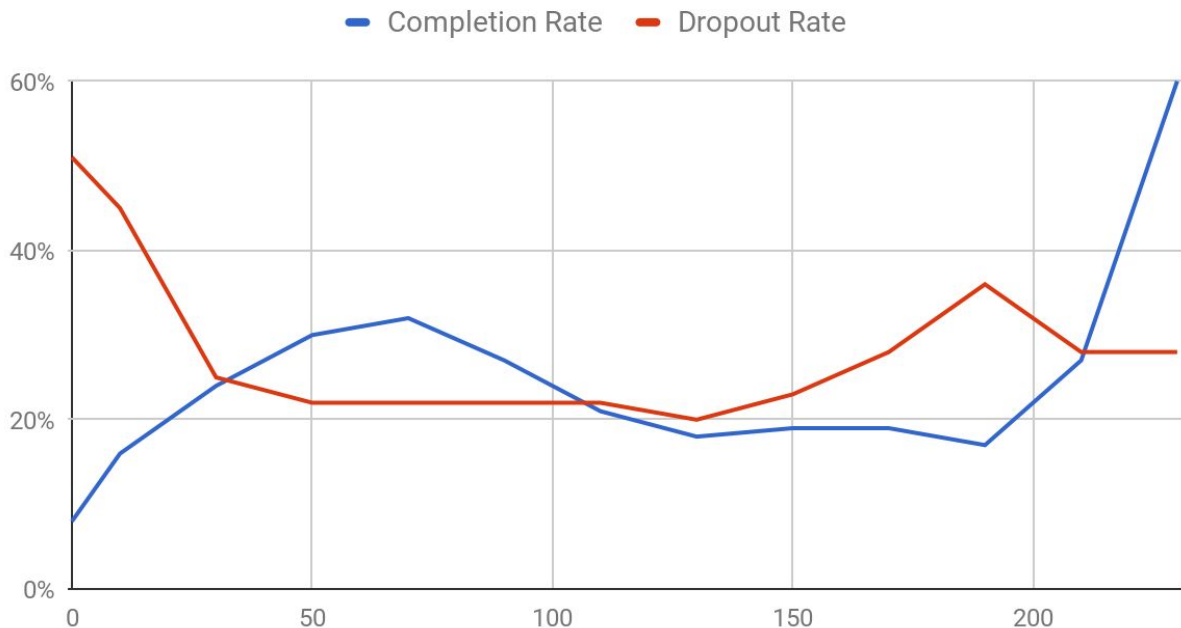
Among all complete engagements, 32% occur within the same days as enrolling, 59% occur within the first 20 days, 70% occur within the first 40 days, and 80% occur within the first 60 days.

Histogram for complete CS and BUS course engagements



Among complete CS and BUS engagements, 27% occur within the same days as enrolling, 53% occur within the first 20 days, 67% occur within the first 40 days, and 80% occur within the first 60 days. We can also look at the completion rate and drop off rate over time. At any point in time, students have three choices: they can complete the course (completion rate), drop out and never return (dropout rate), or continue engaging with the site at a later date ($100\% - (\text{completion rate} + \text{dropout rate})$).

Completion Rate and Dropout Rate

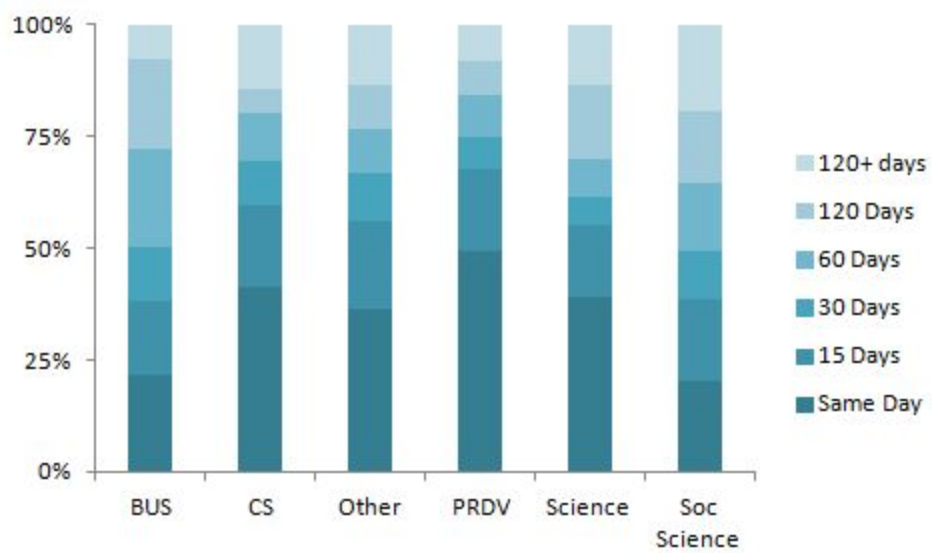
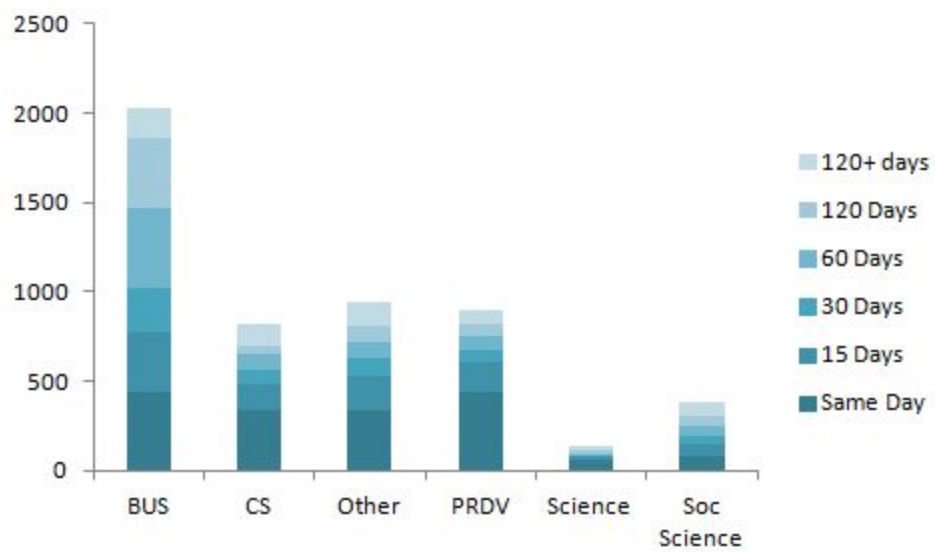


Students Remaining



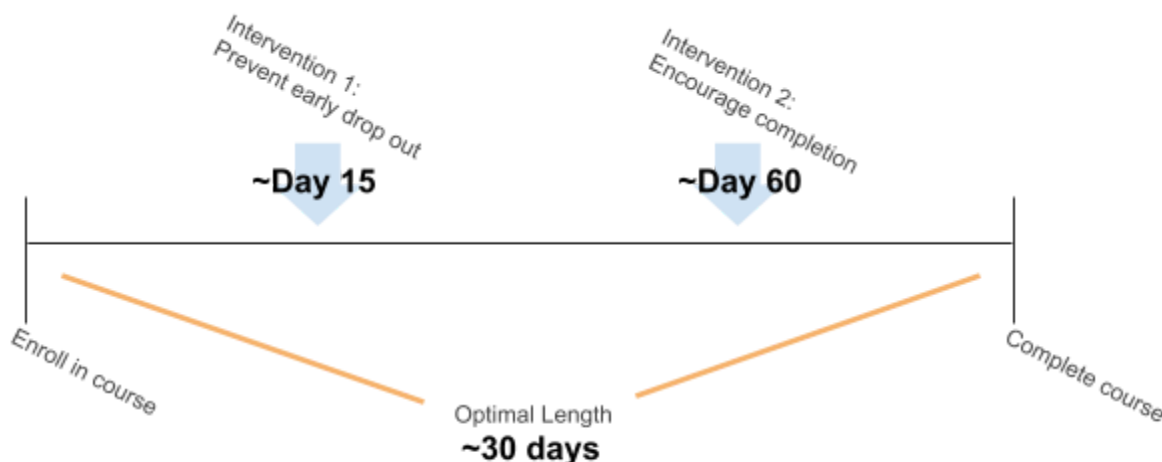
The information to the left is more important than that to the right given the exponentially decreasing amount of students remaining as time goes by.

Lastly, when considering the question of optimal length of a course, we should take into consideration the nature of the course because different subject matters likely require different lengths and are capable of attracting students' interest for different amounts of time. Therefore, I looked at the breakdown of completion times for different subject matters: BUS (all BUS courses), CS (all CS courses), Other (a catch-all for things not included elsewhere), PRDV (All PRDV courses), Science (all science courses), and Soc Science (all social science courses). I look at the raw number and percentage of all completions through 6 different categories: completed the same day as enrollment, between 1 and 15 days, between 16 and 30 days, between 31 and 60 days, between 61 and 120 days, and 120+ days.



CONCLUSION

Returning to the original diagram of course completions, I can add the following:



The optimal length of the course is challenging to determine explicitly. It obviously depends on the subject matter, with business courses being the most able to maintain interest multiple months in (~120 days max). Furthermore, the information presented in this report is just as much a reflection of the actual length of courses as it is a reflection of what these courses should be. For example, PRDV courses may have high completion rates for short timeframes just because they are inherently short courses. That said, a course designed to be completed within 30 days appears to be a good goal across all subject matters. However, I'd like to note again that course length should depend first and foremost on subject matter experts' discretion.

In addition to the finding presented above, attached to this report is an excel spreadsheet with the emails of students who have enrolled in and completed a course in the last year (tab 1) and students who have enrolled in any course in the last year (tab 2). Tab 1 in particular can be used to target students who have already shown proven engagement with Saylor courses. Those who have completed a course within the same day as enrolling or relatively quickly ('Same Day' = 1 or '15 Days' = 1) should be encouraged to get certified in other courses, whereas those who have completed courses in longer periods should be encouraged to expand their knowledge with a similar course.