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How Legacy High School Students Use Their Flexible Time

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How Legacy High School Students Use Their Flexible Time

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There is growing attention to personalizing education to provide students with more flexibility in their education experiences and more time to master academic content (Pane, Steiner, Baird, & Hamilton, 2015). To personalize education, Legacy High School in Bismarck Public Schools, North Dakota, has implemented a schedule that allows students some choice in how they spend a portion of the school day outside of their regularly scheduled classes. Students can choose to use this flexible time, called flex-time, working alone or with classmates on school projects, visiting content-specific learning centers (to receive academic help or engage in enrichment activities), or relaxing with friends. For students who are struggling academically, however, teachers rather than students may determine how these students use some of their flex-time.

Leaders at Legacy High School and Bismarck Public Schools partnered with the Regional Educational Laboratory Central to examine how students use their flex-time. In particular, the study examined whether students with different demographic characteristics and academic achievement levels use their flex-time differently. The study found that, on average over the school year, students had approximately 80 minutes of flex-time a day and chose to use 19 percent of it for academic activities. Female students used a statistically significantly larger percentage of their flex-time (21 percent) for academic activities than male students did (17 percent). The percentage of flex-time used for academic pursuits did not vary by academic achievement level, although students who were struggling academically had a higher percentage of teacher-determined flex-time (9 percent) than did students who were meeting grade expectations (3 percent) and students who were excelling academically (less than 1 percent). Finally, when teachers determined how students used some of their flex-time, students used the largest percentage of that flex-time in school learning centers.

Why this study?

Following the recommendations of the Innovative Education Task Force (Bachmeier, 2018), the North Dakota Department of Public Instruction is implementing programs to support North Dakota schools and districts in developing and implementing innovative education approaches. One of these is personalized education, which allows students greater flexibility in their education experiences as well as more time to master academic content when necessary (Pane, Steiner, Baird, & Hamilton, 2015; for a brief review of the literature describing personalized learning, see appendix A).

Opened in 2015, Legacy High School in Bismarck, North Dakota, was designed to support personalized learning (see appendix C for more information on the setting). The building contains flexible spaces to allow for both small-group and large-group instruction as well as small work stations in each wing to allow for student collaboration. In addition, the school is a "1:1 learning environment" in which all students receive laptops to access coursework, calendars, learning materials, and other resources. A unique aspect of Legacy High School is its "flexible mod" schedule, a modified block schedule that divides the school day into twenty-two 20-minute blocks of time called "mods" (see box 1 for definitions of key terms). Classes are scheduled for two or three mods, with an additional mod at the end of each class for teachers to "call back" students who need additional help. This mod allows teachers to personalize the class for students who need it, and it allows students who are already excelling to use the time for other purposes.

The remaining time in a student's flexible mod schedule—time not assigned to a particular class—is called flex-time. Students can choose how to use their flex-time: working on homework, collaborating with other students on projects,

For additional information, including a literature review, sample flexible mod schedule, technical methods, supporting analysis, and the student time log used for the study, see the appendices for the report on the Institute of Education Sciences website.

Box 1. Key terms

Academic pursuits. Includes academic activities, such as working in learning centers or visiting guidance or counseling professionals, and academic subjects, such as math and reading.

Flexible mod schedule. A modified block schedule in which the day is divided into twenty-two 20-minute blocks of time called "mods." The number of mods for a given class may differ on different days of the week.

Flex-time. The time in a student's school schedule that is not assigned to classes. Students may use this time as they choose for academic or nonacademic pursuits (student-determined flex-time) or as instructed by a teacher (teacher-directed flex-time).

Learning center. Content-specific center where students receive academic assistance or engage in enhancement activities outside of normal class time. Each academic content area has its own learning center.

Nonacademic pursuits. Includes such activities as talking with friends or eating lunch, both on and off campus.

Student agency. The ability of students to direct and take ownership of and responsibility for their learning.

Student-determined flex-time. The portion of flex-time during which students are free to engage in activities of their choice.

Teacher-determined flex-time. The portion of flex-time during which teachers require students to engage in specific activities.

Time log. An online survey that students complete periodically to record how they used their flex-time.

making up missed tests or assignments, attending additional classes to reinforce learning, exploring academic or career interests, or visiting content-specific learning centers. These centers are staffed by teachers throughout the day so that students can receive additional support or engage in enrichment activities. The centers serve students of all ability levels, and students can access center resources during or outside of their regular class schedule. Students can also use their flex-time for personal activities, including spending time off campus. Additionally, teachers may determine how some students use some of their flex-time. For example, teachers may require students to use their flex-time for academic support or to catch up on missed learning opportunities. In this way Legacy High School's flexible mod schedule allows teachers to address individual student needs while giving students greater control over their learning and enabling them to develop skills such as time management and self-advocacy that can increase student agency. (See table B1 in appendix B for a sample flexible mod schedule.)

As a first step in examining how well the flexible mod schedule was enabling students to pursue personalized learning, leaders at Legacy High School and Bismarck Public Schools needed to better understand how students were using their flex-time. To find out, school and district leaders partnered with the Regional Educational Laboratory Central to examine students' use of flex-time and to determine whether flex-time use varied significantly across student demographic groups and whether students who were struggling academically were accessing instructional supports. In addition to providing information that the partners can employ to better support students' use of the learning centers, the findings of this study may enhance teachers' ability to scaffold student decisionmaking. The findings may also be useful to other districts and schools seeking to implement flexible schedules in personalized education.

Research questions

The study addressed the following research questions for the 2018/19 school year:

1. How do Legacy High School students use their flex-time?
2. How does student use of flex-time differ by grade level or student demographic characteristics?
3. How does student use of flex-time differ by academic achievement level?

The data sources, sample, and methods are summarized in box 2 and discussed in detail in appendix C.

Box 2. Data sources, sample, and methods

Data sources

The study team used three types of data provided by Bismarck Public Schools:

- *Student time log data.* Students completed an online time log over five one-week spans during the 2018/19 school year (see the list of log questions in appendix E). The time log was administered in selected class periods on three days during each of these weeks. On each of the three days, the time log prompted students to report how much flex-time they used and how they used it; for example, engaging in academic activities and subjects, engaging in nonacademic activities either on or off campus, or engaging in activities specified by a teacher. Students' time log data were aggregated across all of their time log entries. (Additional details about the student time log is in appendix C.)

- *Demographic characteristics.* Student characteristics included in the analysis were grade level, gender, race/ethnicity, and eligibility for the national school lunch program (to identify socioeconomically disadvantaged students).

- *Academic achievement.* To classify students as struggling, meeting grade expectations, or excelling in math and reading prior to the 2018/19 school year, the study team used either the Measures of Academic Progress or the ACT Aspire math and reading scores from spring of the 2017/18 school year, depending on a student's grade level that year. Analyses of variations in the use of flex-time by student achievement level were conducted only for students in grades 9–11, as assessment scores were not available for grade 12 students (see appendix C for more details).

Sample

During the 2018/19 school year the student time log was administered in selected class periods (14 class periods during the fall semester, and 15 during the spring semester). All class periods were selected from full-year courses, but the instructors in two class periods changed between the fall and spring semesters. Legacy High School leaders selected the class periods from required courses (not electives or honors classes) that met near the end of the school day. For example, if a grade 10 English language arts course had four class periods, Legacy High School leaders would select the period closest to the end of the day. All of the selected class periods met three days a week. All students were asked to complete the time log during each selected class period. To be included in the study sample, students had to have completed the time log at least once during the study period. Preliminary analyses showed that students' flex-time use did not vary based on the number of time logs they completed (see the discussion of the sample in appendix C).

A total of 568 students, or approximately 52 percent of Legacy High School students, were registered in the selected classes. Of these students, the study sample consisted of the 495 students (87 percent of the full sample) who completed the time log at least once, representing approximately 45 percent of the Legacy High School student population. Approximately 86 percent of students in the study sample were White/non-Hispanic, 55 percent were male, and approximately 17 percent were eligible for the national school lunch program. Because of the small number of students identified as receiving special education services (4 percent of the study sample) or being English learner students (less than 1 percent), these characteristics were not included in the analyses. A comparison of the study sample characteristics with the school population characteristics found that three study sample characteristics were statistically different from the school population: the sample had significantly more grade 10 students, fewer grade 12 students, and fewer students with disabilities. (Additional details on characteristics of the sample and differences between the sample and the school population are in appendix C.)

Methodology

The study team calculated the percentage of time students engaged in each flex-time activity and subject as captured by their flex-time time log during the 2018/19 school year. Because students did not always accurately report how they used their flex-time (for example, reported time use might not sum to 100 percent), flex-time percentages contain a level of measurement error (see appendix C on sources of error and how to account for them). Study results are presented as the percentage of all flex-time reported during the 2018/19 school year, so results should not be interpreted as representing how individual students used their flex-time on any individual day. The study team used *t*-tests and analyses of variance to determine whether the percentage of

flex-time students used for each academic or nonacademic pursuit differed significantly by grade level, demographic characteristics, or academic achievement level. To assess whether there were statistically significant differences in how students at different academic achievement levels used their flex-time, the study team first compared students who were excelling in both math and reading, students who were struggling in both content areas, and all other students (for example, students who were excelling in one content area and meeting grade expectations or struggling in another). Next, the team compared students based on their achievement level for each subject separately. (See appendix D for detailed results of the analyses.)

Findings

The study team examined patterns of flex-time use for all students and by grade, gender, race/ethnicity,[1] eligibility for the national school lunch program (students from low-income households), and academic achievement level. In addition to showing the average amount of student flex-time in minutes, the results presented here give the percentages of flex-time that students reported using for academic and nonacademic activities during the 2018/19 school year.

On average during 2018/19 students had approximately 80 minutes of flex-time a day and reported using most of it for nonacademic pursuits

Older students had more daily flex-time on average than younger students (table 1), which is in line with Legacy High School's policy of gradually increasing students' control of their time over the four years of high school. On the whole, students chose how to use 97 percent of their total flex-time, whereas teachers determined how students used 3 percent of total flex-time (figure 1; see appendixes C and D for more detail on time log analyses). For 88 percent of students, teachers did not determine how students should use any of their flex-time. Students used the greatest percentage of total flex-time for nonacademic activities (78 percent), such as talking with friends or eating lunch on and off campus. The average percentage of flex-time that students chose to use for academic activities (19 percent) did not vary across grades (see table D3 in appendix D for details).

Table 1. Average number of flex-time minutes a day for Legacy High School students in the study sample, by grade, 2018/19

Statistic	Grade 9 (*n* = 130)	Grade 10 (*n* = 156)	Grade 11 (*n* = 106)	Grade 12 (*n* = 103)	All students (*N* = 495)
Mean	61.8	75.3	76.2	108.7	78.9
Standard deviation	25.2	29.5	42.9	39.8	37.7

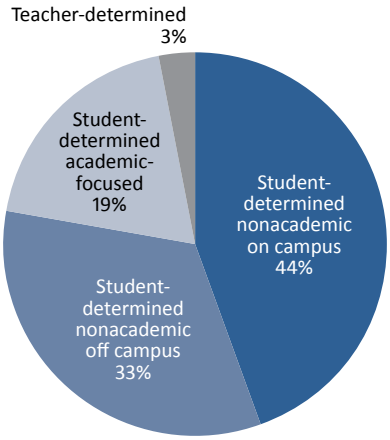
Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

When students used their student-determined flex-time for academic pursuits, they used the largest percentages doing coursework outside of learning centers and focused on math and science

Students who chose to use some of their flex-time for academic pursuits spent most of this academic time (71 percent) working on coursework outside of school learning centers and spent much less of this academic time (7 percent) in learning centers (figure 2; see also table D1 in appendix D). Students used the smallest percentages of their student-determined academic-focused flex-time for internships (0.2 percent) and meetings with guidance counselors (1 percent). When asked to report which academic subjects they engaged in, students indicated that they used the largest percentages of their student-determined academic-focused flex-time for math (21 percent) and science (18 percent) and the smallest percentage for art/music and foreign languages (4 percent each; figure 3). (A more detailed description of how students used their flex-time is in appendix D.)

1. Race/ethnicity was constructed as a dichotomous variable of White/non-White because racial/ethnic minority groups were too small to analyze with statistical precision.

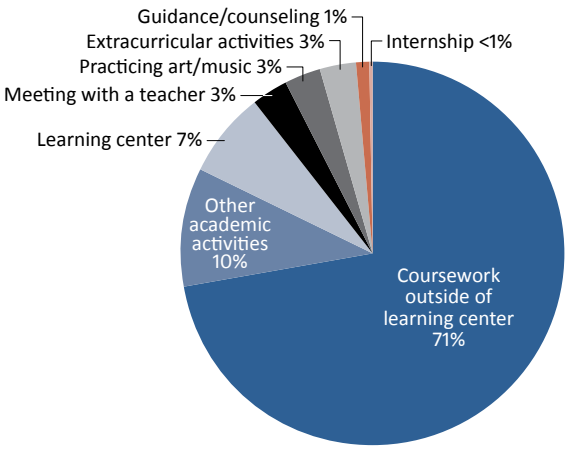
Figure 1. Legacy High School students determined how to use a majority of their flex-time and used the largest percentage of it for nonacademic pursuits on campus, 2018/19



Note: *n* = 495. Percentages do not sum to 100 because of rounding, student nonresponse to particular time log questions, and student reporting errors. See table D1 in appendix D for detailed results.

Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

Figure 2. Among academic activities, Legacy High School students used the largest percentage of their student-determined academic-focused flex-time on coursework outside of learning centers, 2018/19



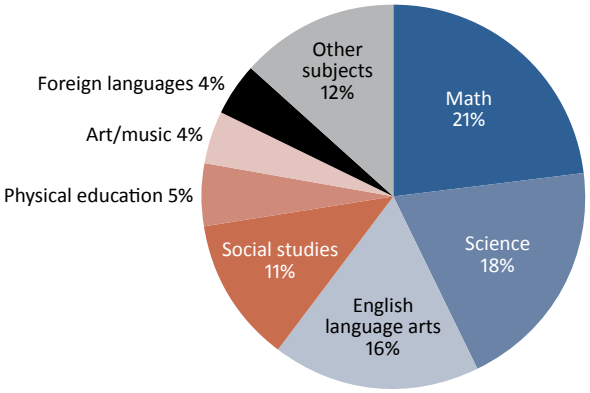
Note: *n* = 353 (students who chose to spend any of their flex-time on academic pursuits). Percentages do not sum to 100 because of rounding, student nonresponse to particular time log questions, and student reporting errors. When students selected "other," they were prompted for a more specific answer, but many students did not provide one. In addition, some answers were confusing (for example, writing in "lunch" for an academic topic). See table D1 in appendix D for detailed results.

Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

The largest percentages of students' teacher-determined flex-time were used in learning centers and focused on math and science

Teachers determined some of the flex-time use of only a few students (61 of 495 students) and of only a very small percentage of all students' total flex-time (3 percent; see also table D2 in appendix D). Students used the largest percentages of their teacher-determined flex-time working in learning centers (42 percent) and engaging in "other" academic activities (28 percent) such as taking tests or completing assignments (figure 4). By academic subject, students used the largest percentages of their teacher-determined flex-time for math (24 percent) and science (11 percent; figure 5). They used the smallest percentages for social studies, foreign languages, and physical education (3 percent each).

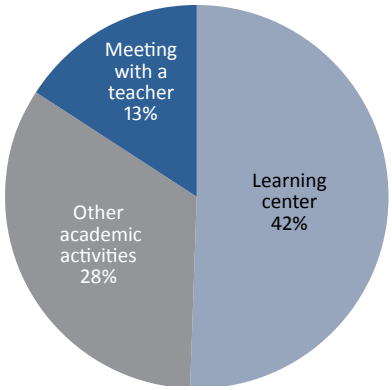
Figure 3. Among academic subjects, Legacy High School students used the largest percentages of their student-determined academic-focused flex-time for math and science, 2018/19



Note: *n* = 353 (students who chose to spend any of their flex-time on academic pursuits). Percentages do not sum to 100 because of rounding, student nonresponse to particular time log questions, and student reporting errors. See table D1 in appendix D for detailed results.

Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

Figure 4. Among academic activities, Legacy High School students used the largest percentage of their teacher-determined flex-time in learning centers, 2018/19



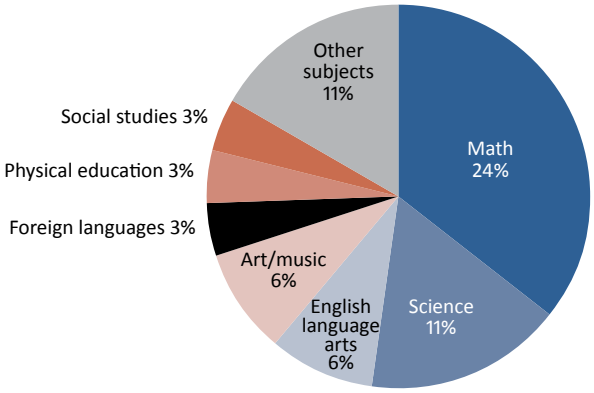
Note: *n* = 61 (students for whom teachers determined any of their flex-time use). Percentages do not sum to 100 because of rounding, student non-response to particular time log questions, and student reporting errors. See table D2 in appendix D for detailed results.

Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

Students eligible for the national school lunch program and non-White students had less student-determined flex-time

Among the student demographic characteristics examined, differences in the percentages of total flex-time that were student determined and teacher determined were not statistically significant by gender (see table D4 in appendix D), but the differences were significant by race/ethnicity (see table D5) and eligibility for the national school lunch program (see table D6). White students determined how to use 98 percent of their total flex-time, whereas non-White students determined how to use 90 percent (figure 6). Students who were eligible for the national school lunch program determined how to use 95 percent of their flex-time, whereas noneligible students determined how to use 98 percent. Although the differences by demographic characteristics are relatively small, the ability of White students and students not eligible for the national school lunch program to determine how to use 3–8 percentage points more of their total flex-time on average across the year could have implications for supporting the development of student agency in all students.

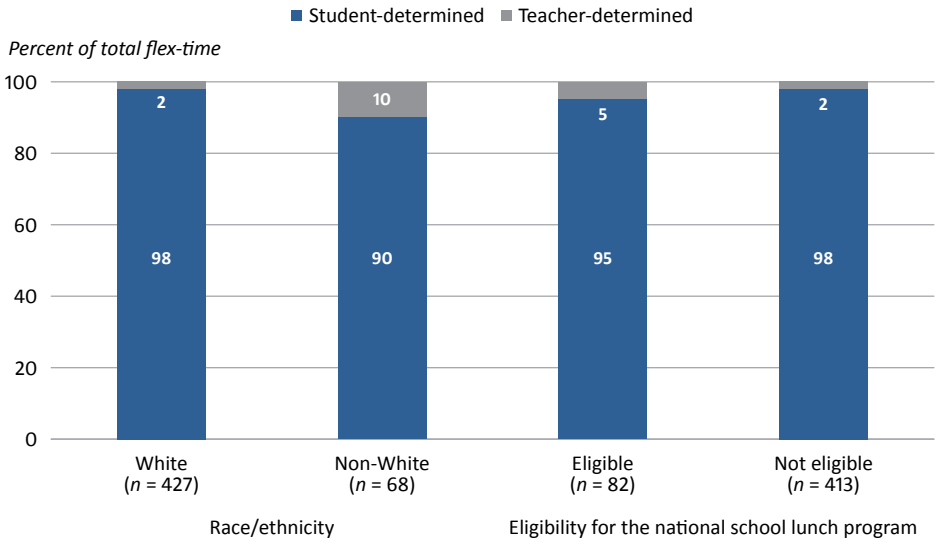
Figure 5. Among academic subjects, Legacy High School students used the largest percentages of their teacher-determined flex-time for math and science, 2018/19



Note: *n* = 61 (students for whom teachers determined any of their flex-time use). Percentages do not sum to 100 because of rounding, student non-response to particular time log questions, and student reporting errors. See table D2 in appendix D for detailed results.

Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

Figure 6. The percentages of total flex-time that were student determined were significantly lower for Legacy High School students who were not White and students who were eligible for the national school lunch program, 2018/19



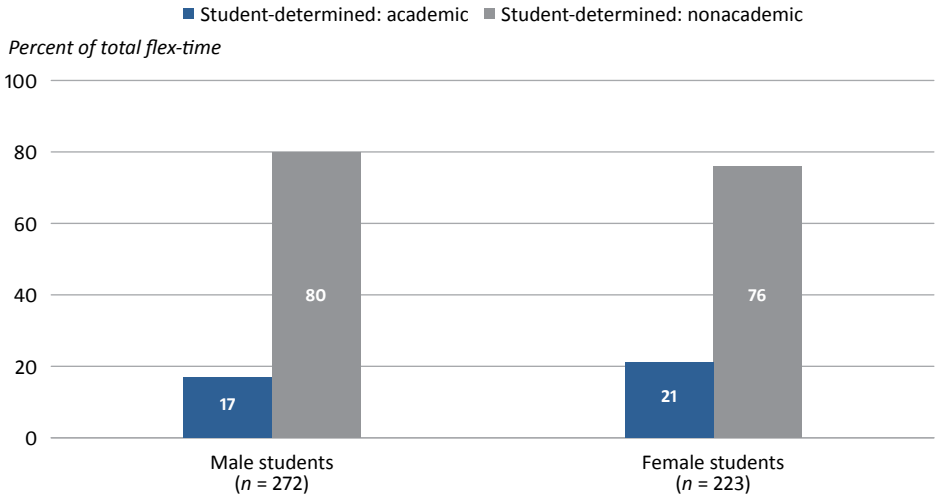
Note: *n* = 495. Differences by race/ethnicity were significant at $p < .001$, and differences by eligibility for the national school lunch program were significant at $p = .05$. See tables D5 and D6 in appendix D for detailed results.

Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

In most cases students' use of flex-time for academics did not differ by demographic characteristics, except that female students used more of their flex-time for academics than male students did

Among students who determined their own flex-time, female students used 21 percent of their total flex-time for academics, significantly more than male students did (17 percent; figure 7). There were no significant differences among students for other demographic characteristics in how much total flex-time they chose to devote to academic pursuits (see tables D4–D6 in appendix D).

Figure 7. Among Legacy High School students who determined how to use their flex-time, female students used significantly more of their total flex-time for student-determined academic activities than male students did, 2018/19



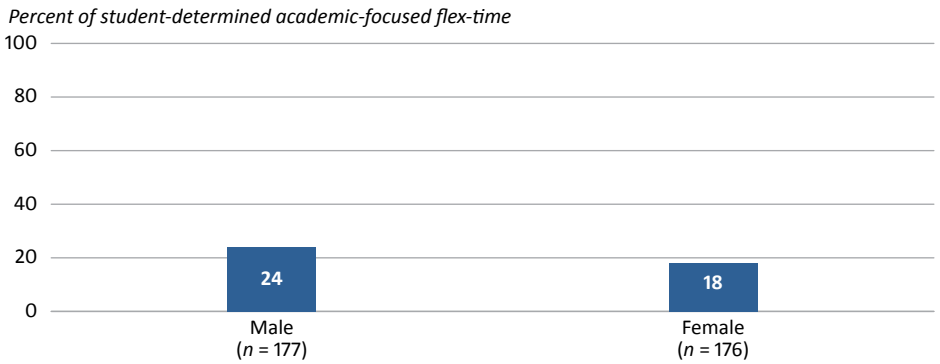
Note: *n* = 495. Percentages are based on the 97 percent of total flex-time that was student determined. The difference in the the percentage of total flex-time used for student-determined academic activities between male and female students was significant at $p < .05$. See table D4 in appendix D for detailed results.

Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

There were a few differences by demographic characteristics in how students used their flex-time for academic pursuits

When students chose to use their flex-time for academic pursuits, only a few of their academic activities and subjects varied significantly by demographic characteristics. White students used significantly more of their student-determined academic-focused flex-time for other academic activities (11 percent) than non-White students did (3 percent; see table D5 in appendix D). When students selected "other," they were prompted to specify an answer. In many cases students did not do so, and sometimes when they did, the answers were confusing (for example, writing in "lunch" for an academic topic). Also, male students used significantly more of their student-determined academic-focused flex-time for math (24 percent) than female students did (18 percent; figure 8; see also table D4).

Figure 8. Among Legacy High School students who determined how to use their flex-time, male students used significantly more of their student-determined academic-focused flex-time for math than female students did, 2018/19



Note: *n* = 353 (students who chose to spend any of their student-determined flex-time on academic pursuits). The difference between male and female students was significant at $p = .05$. See table D4 in appendix D for detailed results.

Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

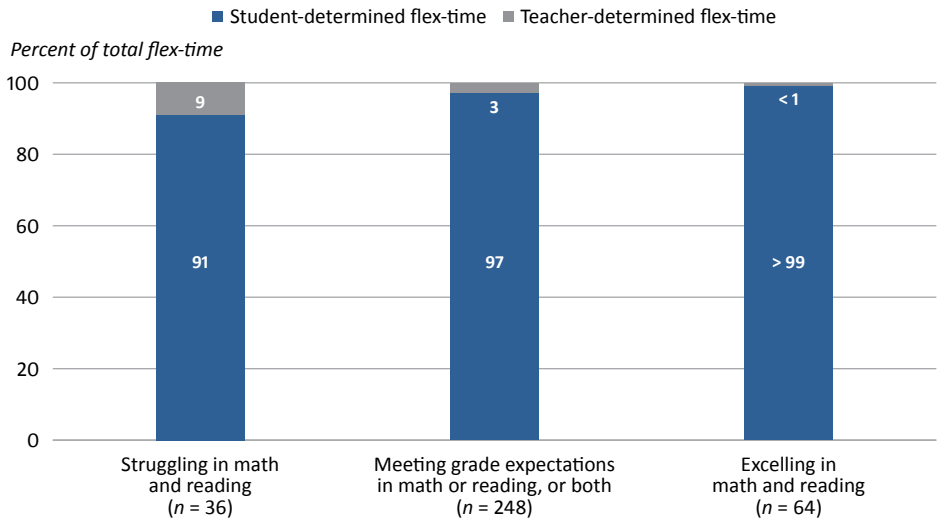
Students who were struggling academically had more teacher-determined flex-time than other students did

Approximately 10 percent of students were classified as struggling in both math and reading, 71 percent were meeting grade expectations in at least one subject, and 18 percent were excelling in both subjects. Students who were struggling in both math and reading had significantly more teacher-determined flex-time (9 percent of total flex-time) than did students who were excelling in both subjects (less than 1 percent) and students who were meeting grade expectations or excelling in at least one of the subjects (3 percent; figure 9; see also table D7 in appendix D). Students struggling in reading had significantly more teacher-determined flex-time (6 percent of total flex-time) than did students who were meeting grade expectations or excelling in reading (2 percent each; see table D9). There were no statistically significant differences for students struggling in math (see table D8).

The percentage of total flex-time students chose to use for academics did not vary by achievement level, but where they used their nonacademic-focused flex-time did

How much total flex-time students chose to use for academics was not related to whether they were struggling or excelling in both math and reading or in either of them (see tables D7–D9 in appendix D). Separate analyses were conducted by subject area and across subject areas. There was a significant difference across achievement levels in how much total flex-time students chose to engage in nonacademic activities on or off campus. Students who were excelling academically in both math and reading spent a significantly larger percentage of their total flex-time engaged in nonacademic-focused activities on campus (74 percent) than did students who were struggling in both math and reading (40 percent) or students who were meeting grade expectations in math or reading or both (43 percent; figure 10; see also table D7). This pattern of results was similar when the influence of math and reading achievement were analyzed separately.

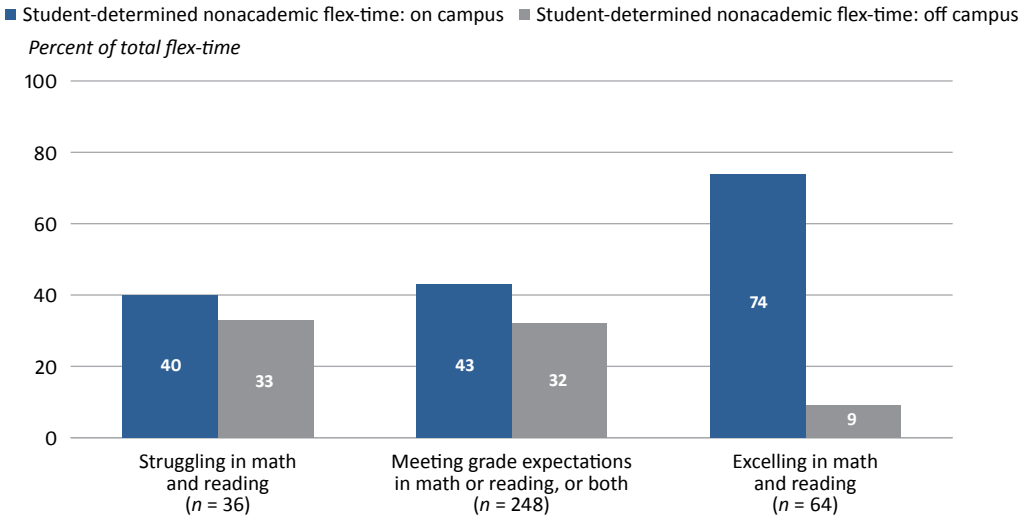
Figure 9. Legacy High School students who were struggling in both math and reading had significantly more teacher-determined flex-time than did students who were not struggling in both subjects, 2018/19



Note: n = 348. Grade 12 students were not included in this analysis. The difference in the percentage of total flex-time that was teacher determined between students struggling and students meeting expectations was significant at $p < .05$, and the difference between students struggling and students excelling was significant at $p < .01$. See table D7 in appendix D for detailed results.

Source: Authors' analysis of 2017/18 and 2018/19 school year data provided by Bismarck Public Schools.

Figure 10. Legacy High School students who were excelling academically in both math and reading used significantly more of their total flex-time engaged in nonacademic activities on campus than off campus, 2018/19



Note: *n* = 348. Percentages are based on total flex-time. Grade 12 students were not included in this analysis. The difference in the percentage of total flex time used for student-determined nonacademic activities on campus between students struggling and students excelling and between students meeting expectations and students excelling was significant at $p < .001$. See table D7 in appendix D for detailed results.

Source: Authors' analysis of 2017/18 and 2018/19 school year data provided by Bismarck Public Schools.

Students who were struggling academically chose to use their flex-time focused on academics differently from other students

Students who were struggling in both math and reading chose to use significantly less of their student-determined academic-focused flex-time for coursework outside of learning centers (47 percent) than did students who were meeting grade expectations in at least one of these subjects (70 percent) and students who were excelling in both subjects (89 percent; figure 11; see also table D7 in appendix D). Students struggling in both subjects chose to use significantly more of their student-determined academic-focused flex-time (31 percent) for "other" academic activities than did the other two student groups (7 percent each). As described previously, this "other" category often had no further clarification from students or was not, in fact, an academic activity (for example, eating lunch, riding the bus).

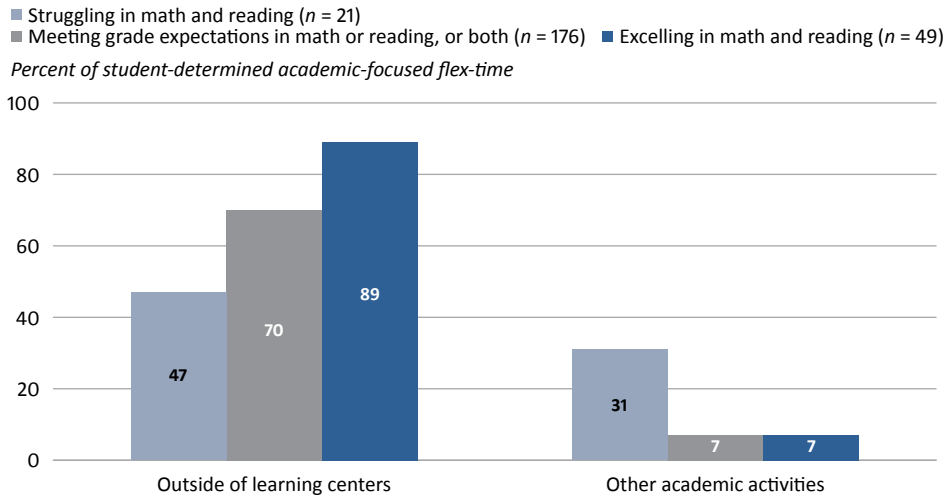
Students who were struggling in reading chose to use less of their student-determined academic-focused flex-time for English language arts

Students who were struggling in reading chose to use significantly less of their student-determined academic-focused flex-time for English language arts (6 percent) than did students who were meeting grade expectations in reading (19 percent). Students excelling in reading chose to use significantly more of their student-determined academic-focused flex-time for social studies (17 percent) than did students who were meeting grade expectations in reading (6 percent; figure 12; see also table D9 in appendix D). There were no other statistically significant differences by academic area.

Students eligible for the national school lunch program chose to use more of their total flex-time engaged in nonacademic activities on campus than students not eligible for the program did

When students chose to use some of their student-determined flex-time for nonacademic activities, they were asked to report how much of that time they used on campus and how much they used off campus. Although all

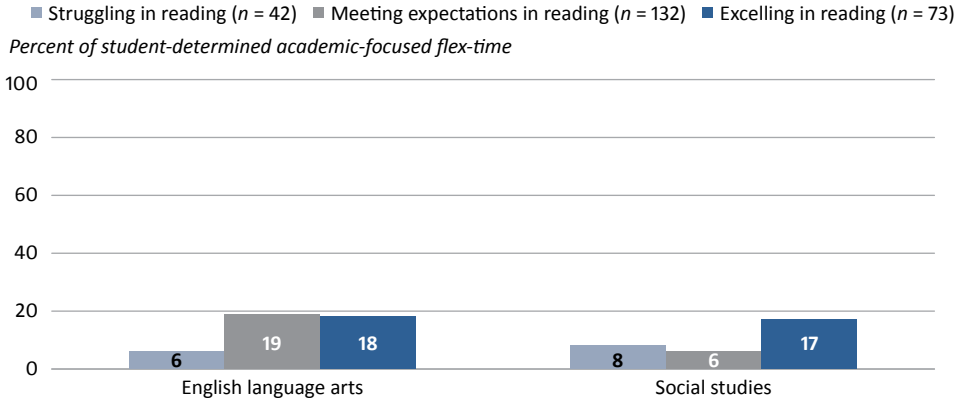
Figure 11. Legacy High School students struggling in both math and reading chose to use significantly less of their student-determined academic-focused flex-time time for coursework outside of learning centers and more for "other" academic activities



Note: *n* = 246. Grade 12 students were not included in this analysis. The difference in the percentage of student-determined academic-focused flex-time used for working on coursework outside of learning centers between students struggling and meeting expectations and between students meeting expectations and excelling was significant at $p < .05$, and the difference between students struggling and excelling was significant at $p < .001$. The difference in the percentage of student-determined academic-focused flex-time used for other academic activities between students struggling and students meeting expectations and between students struggling and students excelling was significant at $p < .05$. See table D7 in appendix D, which lists detailed results, including the remaining student-determined academic-focused flex-time not represented in the figure.

Source: Authors' analysis of 2017/18 and 2018/19 school year data provided by Bismarck Public Schools.

Figure 12. Legacy High School students' use of student-determined academic-focused flex-time for English language arts and social studies varied significantly by reading achievement level, 2018/19

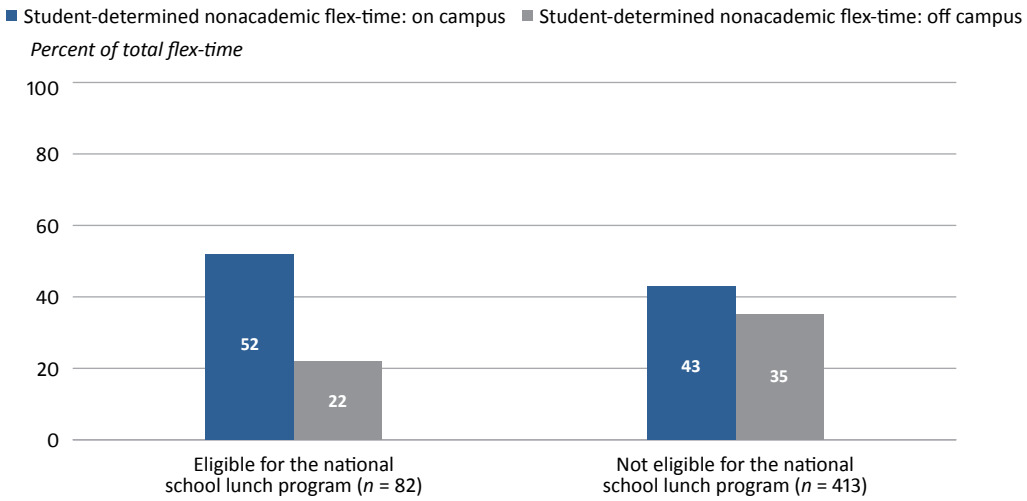


Note: *n* = 247. Grade 12 students were not included in this analysis. The difference in the percentage of student-determined academic-focused flex-time used for English language arts between students struggling and students meeting expectations was significant at $p < .05$. The difference in the percentage of student-determined academic-focused flex-time used for social studies between students meeting expectations and studets excelling was significant at $p < .01$. See table D9 in appendix D for detailed results.

Source: Authors' analysis of 2017/18 and 2018/19 school year data provided by Bismarck Public Schools.

students chose to use more of their nonacademic flex-time engaged in activities on campus (44 percent of total flex-time) than off campus (33 percent), students eligible for the national school lunch program spent significantly more of their total flex-time engaged in nonacademic activities on campus (52 percent) than noneligible students did (43 percent; figure 13; see also tables D1 and D6 in appendix D). Differences in the percentages of time spent on and off campus did not vary significantly by gender or racial/ethnic group (see tables D4 and D5).

Figure 13. Legacy High School students eligible for the national school lunch program spent significantly more of their nonacademic flex-time on campus than noneligible students did, 2018/19



Note: n = 495. The difference in the percentage of total flex-time used for student-determined nonacademic activities on campus between students eligible for the national school lunch program and students not eligible was significant at $p < .05$, and the difference in the percentage of total flex-time used for student-determined nonacademic activities off campus between students eligible for the national school lunch program and students not eligible was significant at $p < .01$. See table D6 in appendix D for detailed results.

Source: Authors' analysis of 2018/19 school year data provided by Bismarck Public Schools.

Implications

The flexible mod schedule allows students time to focus on academic activities outside of regularly scheduled classes as needed. Students had 80 minutes of flex-time a day on average over the 2018/19 school year. However, the study found that students chose to use 19 percent of it for academic activities. To the extent that Legacy High School leaders believe that students should spend more of their flex-time on academics, that finding suggests that students may need more support in using flex-time for personalized learning.

The study findings also suggest that students who are struggling academically may benefit from targeted supports. Ideally, students struggling academically would choose to use more time for coursework, whether in or out of the learning centers, and would opt to remain on campus for their nonacademic flex-time, which could increase the amount of flex-time spent on academic pursuits because of greater access to academic supports. However, students who were struggling academically were more likely than other students to use their academic-focused flex-time for "other" academic activities and to leave campus when engaged in nonacademic activities. Leaders at Legacy High School and Bismarck Public Schools indicated that this finding suggests that students, particularly those struggling academically, may need additional support to help them choose how to use their flex-time effectively. Furthermore, there were only small differences in the percentage of teacher-determined flex-time between students who were struggling and other students. An increase in teacher-determined flex-time may be an additional, necessary way to support these students.

Because of the finding that students were not using much of their flex-time for academic pursuits, leaders at Legacy High School and Bismarck Public Schools are considering training teachers to help all students develop self-regulated functioning and positive choice. For example, teachers might learn to model personal responsibility and allow students to set and evaluate their own academic goals in the classroom (Schunk, 2008). Providing such modeling and learning opportunities in the more structured environment of the classroom might influence the choices students make about how to use their flex-time outside the classroom. However, this approach would need to be tested. School and district staff might consider using the tool developed for the study to examine

student time log data in order to determine whether students' use of flex-time changes following teachers' interventions.

The study findings suggest that the purpose and benefits of the learning centers might need to be re-emphasized to students and teachers alike. Overall, students used the learning centers relatively infrequently. When students chose to use their flex-time for academic activities, they used far more of that time outside the centers. Students who were struggling academically were no more likely to use learning center resources than other students were. Although students used the largest percentage of teacher-determined flex-time engaging in academic activities in the learning centers, these activities made up a very small percentage of students' total flex-time.

Leaders at Legacy High School and Bismarck Public Schools recognize that the learning centers are underused. They noted that the flexible mod schedule includes extra time (apart from flex-time) built into regularly scheduled class time that teachers can use to support struggling students. Teachers' use of this extra time in class may reduce the amount of teacher-determined or student-determined flex-time spent getting additional help in the learning centers, as students and teachers might feel that the extra class time meets academic needs. School and district leaders also noted that students and teachers might view the learning centers as supports only for students who are struggling academically. Students may not be aware that the centers provide resources such as enrichment activities and test preparation for students at all academic ability levels. To encourage use of the learning centers, school and district leaders intend to better inform teachers and students about the academic enhancement, career exploration, and other resources that the centers offer.

The study did not allow for an examination of the specific activities of students who used their flex-time for academics in or out of the learning centers. Additionally, students' academic achievement levels were based on test scores from the previous year. Therefore, it was not possible to determine whether engaging in specific academic activities was correlated with subsequent or current academic achievement. Future research might examine what academic activities students choose for their flex-time and how these choices are associated with academic outcomes.

In addition, there may be limitations to the generalizability of the study results. For example, results might not be representative of the full Legacy High School student population or be generalizable to schools and districts with student populations that differ substantially from the Legacy High School population (see appendix C). Moreover, although the study was designed to collect data across the school year, the number of time logs that each student completed varied. While the percentage of flex-time used for academic activities did not vary based on the number of time log entries, students' use of their flex-time might vary in ways that the current study was unable to detect.

Additionally, analysis of differences in flex-time use by student characteristics was limited by small sample sizes. For example, the study found that students struggling in math or reading, or both, did not choose to use more of their flex-time focusing on these subjects than other students did. However, due to the relatively small number of students overall whose teachers required them to use their flex-time for specific academic activities, it was not possible to determine whether or to what extent teachers required struggling students to focus on the relevant subjects. Moreover, future research might examine whether English learner students or students receiving special education services use their flex-time differently than students in other groups. Furthermore, the high rate of "other" answers suggests the need to revise the survey to elicit clearer responses. For example, if the survey had included categories of "lunch" or "transportation," students might have chosen these categories instead of writing them in as "other" under academic activities.

Legacy High School's flexible mod schedule is an innovative approach that allows students some choice in how they use their time during the school day. This study offers a glimpse into how students have responded to this innovation. By having students regularly record data on how they use their flex-time, the study models an approach that others might take to determine how students respond to education innovations.

The results of the study illustrate the importance of assessing how students actually engage with a given education innovation. The study found that students used their flex-time in a variety of expected and unexpected ways. Educators implementing school schedules that provide students with choice in how they use some of their time during the school day might consider the results of this study when evaluating student choice in their own schools. The results may also prompt educators employing such flexible schedules to provide additional supports to help students make productive choices in their use of school-day time outside the classroom.

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