The Modern Classrooms Project: Survey Results for the 2019–20 School Year

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EXECUTIVE SUMMARY:
The Modern Classrooms Project:
Survey Results for the 2019–20 School Year

The Modern Classrooms Project provides professional development and coaching to teachers to help them meet their students' academic needs by integrating self-paced and mastery-based principles and technology into instruction. This approach works to develop students' abilities to engage in self-directed learning. In this study, teachers opted to participate in a week-long summer training and ongoing coaching and mentoring by Modern Classrooms staff. The Modern Classrooms Project contracted with the Center for Research and Reform in Education (CRRE) at Johns Hopkins University to conduct a study of the efficacy of The Modern Classrooms approach on teacher and student outcomes during the 2019–20 school year.

Sample

Surveys were administered throughout the 2019–20 school year to teachers and students in three public middle schools, six public high schools, and one public charter middle and high school across three local educational agencies in the mid-Atlantic region. Modern Classroom teachers, or "Fellows," were surveyed both at the start and midpoint of the school year. Comparison teachers were also recruited from within the same schools, and they completed a survey at the midpoint of the school year. Fellows also administered a student survey to their classrooms participating in the Modern Classroom model at both the start and midpoint of the school year. Comparison teachers administered the student survey at the midpoint of the school year only. The study sample consisted of 55 teachers and 1,929 students.

Data & Analysis

Teacher and student surveys were developed by The Modern Classrooms Project and piloted in an earlier study.[1] The teacher survey included items relating to effective classroom practices, differentiation of instruction, student skills development, and beliefs about teaching. The student survey included items relating to student engagement in the course, skills development, self-efficacy, and student-teacher relationships.

This study included two primary types of analyses. A comparison analysis examined differences in midpoint survey responses for Modern Classroom Fellows and

[1] Wolf, R. (2019). *Survey findings for the 2018 – 19 implementation of The Modern Classrooms Project.* Towson, MD: Center for Research and Reform in Education (CRRE), Johns Hopkins University. http://jhir.library.jhu.edu/handle/1774.2/62370

their students and comparison teachers and their students. Therefore, this analysis revealed differences in beliefs for teachers and students who participated in the Modern Classrooms approach relative to those who did not. The second type of analysis examined changes in survey responses over time, from the start to the midpoint of the year, for Fellows and their students only. This analysis showed to what extent Fellows and their students rated improvements over time and after participating in the Modern Classrooms model. Survey responses were analyzed using Chi-square tests to limit the possibility that observed differences were due to chance alone. The study cannot rule out other factors not related to Modern Classrooms that may have influenced the results.

Findings

One key finding is that Modern Classrooms Fellows felt significantly[2] more capable of differentiating instruction than comparison teachers. For example, at the midpoint of the school year, 89% of Fellows indicated that they were able to meet students at different levels of understanding compared with 44% of comparison teachers. One way in which Fellows were able to more effectively differentiate instruction is by having more time during class to work one-on-one with students. As a result, Fellows could both target supports to struggling students and better support advanced students.

Another important benefit of Modern Classrooms was that it significantly reduced stress for some teachers. About 20% of Fellows found class time to be stressful before implementing Modern Classrooms, while no Fellows found class time to be stressful after implementing Modern Classrooms for just over one semester.

Beyond differentiation and reduced stress, Modern Classrooms Fellows reported other significant improvements in their teaching practices relative to comparison teachers, and those included providing students with adequate time to complete work, planning effective lessons, managing student behavior, and using technology effectively. Modern Classrooms Fellows did not report improvements over comparison teachers in their interpersonal relationships with students or the development of students' academic skillsets, however. Finally, Modern Classrooms Fellows were more likely than comparison teachers to agree that they were growing professionally. Yet enjoyment of teaching and plans to remain in the profession were similar for Fellows and comparison teachers.

From the student perspective, participating in a Modern Classroom improved their ability to engage in self-directed learning. Students in Modern Classrooms reported significantly higher rates relative to comparison students in being able to teach themselves new academic content, catch up if they missed class, and complete

[2] "Significant" in this report refers to statistical significance.

challenging assignments without giving up. Students in Modern Classrooms also reported learning how to use technology in class to a greater extent than comparison students. Students in Modern Classrooms also reported greater self-efficacy in learning and higher rates of engagement in terms of learning things that were relevant to them than comparison students.

Though Modern Classrooms Fellows did not report improved teacher-student relationships over comparison teachers, students in Modern Classrooms reported improved relationships with their teachers relative to comparison students. More specifically, significantly higher percentages of Modern Classrooms students than comparison students reported that their teachers challenged them to learn, provided personal support and encouragement, and cared about them as an individual. Modern Classrooms students spoke very highly of their teachers and of the peaceful classroom environments created by the Modern Classrooms teaching style.

As a result of their experiences, significantly more (70%) Modern Classrooms students wanted to take more courses similar to their Modern Classrooms course than comparison students (59%) who wanted to take more courses similar to their traditional one. In addition, significantly more (84%) students in Modern Classrooms indicated that they liked the way their course was taught compared with comparison students (76%). While students overwhelmingly supported the Modern Classrooms model, around 10% of students missed the more traditional lectures and advocated for a hybrid approach.

Conclusion

In conclusion, this study yields overwhelming positive support for The Modern Classrooms Project from the perspective of both students and teachers who participated in the program during the 2019–20 school year. According to self-report survey data, Modern Classrooms benefitted both middle and high school teachers, as well as teachers of different academic subjects. Modern Classrooms appeared to have the strongest effects on teachers' abilities to differentiate instruction to individual students and students' abilities to engage in self-directed learning.

Given the descriptive nature of this study, and that the teacher and student samples were ones of convenience, this study cannot conclude that participation in The Modern Classrooms Project caused the positive changes identified in this report. However, in examining both differences in survey responses for both Modern Classrooms and comparison teachers and students, as well as changes over time for Modern Classrooms teachers and students, this study provides more reliable evidence of the efficacy of Modern Classrooms than using just one method.

More research is needed to determine to what extent The Modern Classrooms Project results in improved student achievement. More quantitative and qualitative

research is also needed to better understand the underlying mechanisms in which The Modern Classrooms Project may cause improvements in both teacher and student outcomes.

The Modern Classrooms Project: Survey Results for the 2019–20 School Year

The Modern Classrooms Project provides professional development and coaching to teachers to help them meet their students' academic needs by integrating self-paced and mastery-based principles and technology into instruction. This approach works to develop students' abilities to engage in self-directed learning. Specifically, the program is grounded in three core practices:

- *Blended instruction:* Teachers replace lectures with videos, and spend class time working directly with students.
- *Self-paced structure*: Teachers differentiate instruction based on student needs so that students are always challenged and engaged.
- *Mastery-based learning:* Teachers assess students on understanding, not completion, and no student advances until ready.

In this study, Fellows opted to participate in a week-long training in summer 2019 and ongoing coaching and mentoring by Modern Classrooms staff during the 2019–20 school year. The training itself was self-paced and mastery-based and incorporated technology. During the training, teachers completed a Unit Planning Template for the first unit of their course(s) and attempted to master 10 Learning Objectives relating to blended instruction, self-paced learning, and mastery-based assessment. Their mastery of those learning objectives was assessed as part of the training.

The Modern Classrooms Project contracted with the Center for Research and Reform in Education (CRRE) at Johns Hopkins University to conduct a study of the efficacy of The Modern Classrooms approach on teacher and student outcomes during the 2019–20 school year. CRRE is highly qualified for conducting this evaluation given our expertise in and large portfolio of K-12 program evaluations. We are also highly knowledgeable about the rigorous evidence standards in education research as outlined by the Every Student Succeeds Act (ESSA).

This study used teacher survey data collected at the midpoint of the 2019–20 school year to determine whether Modern Classrooms teacher "Fellows" and students reported more favorable outcomes than did comparison teachers and students. Additionally, for Modern Classrooms teachers and students only, the study examined changes over time in teacher and student survey responses, from the start to the midpoint of the school year. More information about the surveys and methods is provided in the following section.

Methods

Sample

Surveys were administered throughout the 2019–20 school year to teachers and students in three public middle schools, six public high schools, and one public charter middle and high school across three local educational agencies in the mid-Atlantic region. Modern Classroom teachers, or "Fellows," were surveyed both at the start and midpoint of the school year. Fellows also administered the student survey to their classrooms participating in the Modern Classroom model at both the start and midpoint of the school year. The Fellow sample included 19 teachers who were implementing Modern Classrooms for the first time in 2019–20, and 9 teachers who were in their second year of Modern Classrooms implementation.

Comparison teachers were also recruited from within the same schools and were surveyed at the midpoint of the school year. Comparison teachers also administered the student survey at the midpoint of the school year. Table 1 outlines the teacher sample sizes and characteristics.

Table 1. Teacher characteristics

	Fellow	Comparison
Female	68%	67%
White	68%	56%
Black	28%	30%
Other race	4%	15%
Mean age	33.6	36.7
Mean years of teaching experience	9.0	10.4
Traditional certification	64%	48%
Alternative certification	28%	37%
Other certification	9%	15%
Taught...		
Middle school	36%	26%
High school	64%	74%
Science	32%	41%
Mathematics	30%	15%
English	17%	26%
Social studies	11%	11%
Other subject	11%	7%
Teacher N	28	27

Fellow and comparison teachers were relatively similar in terms of demographic characteristics. Teachers were mostly female and White, and just less than one-third of teachers were Black. Fellow and comparison teachers were also similar in age and average years of teaching experience, and the vast majority of study teachers were

seasoned teachers. A higher percentage of Fellows (64%) held traditional teaching certificates than comparison (48%) teachers, but this difference was not statistically significant.

The teacher sample contained more high school teachers than middle school teachers, and teachers taught a range of subjects. Relative to comparison teachers, a greater percentage of Fellows were mathematics teachers (30% versus 15%), and lower percentages of Fellows were English teachers (17% versus 26%) and science teachers (32% versus 41%). Despite some differences in courses taught and certification type, Fellow and comparison teachers were comparable.

Twenty-three (out of 28) Fellows and 21 (out of 27) comparison teachers administered a survey to their students. Because students had multiple classes, about one-third completed the survey multiple times for different teachers or courses.[3] Demographic information for students was not available, and course characteristics for students generally followed the same patterns described above. One exception was that a greater percentage of Modern Classrooms students were in high school, and a greater percentage of comparison students were in middle school. Descriptive analyses explored whether there appeared to be differences in student responses for middle and high school students to rule out the possibility that differences in survey results for Modern Classrooms and comparison students were driven by grade-level differences.

Table 2. Student characteristics

	Fellow	Comparison
Middle school	36%	56%
High school	64%	44%
Course in which took survey…		
Science	35%	34%
Mathematics	25%	12%
English	16%	40%
Social studies	11%	6%
Other subject	14%	8%
Student N	1,097	832

NOTE—The student N in this table represents the number of unique student-course combinations. The total number of students in this study was 1,549.

[3] Sixty-three percent students completed the survey once for a single course, 28% of students completed the survey twice for two courses, and the remaining 8% of students completed the survey more than two times for multiple courses.

Survey Instruments

Teacher and student surveys were developed by The Modern Classrooms Project and piloted in an earlier study.[4] The teacher survey included items relating to:

- Effective classroom practices
- Differentiation of instruction
- Student skills development
- Beliefs about teaching

The student survey included items relating to:

- Engagement in the course
- Skills development
- Self-efficacy
- Beliefs about teacher efficacy

The surveys also included a few open-ended items gauging participant experiences in their courses. Background and demographic information was also captured in the teacher surveys. Copies of the survey instruments are provided in Appendix B.

Analytic Approach

This study included two primary types of analyses. The comparison analysis examined differences in midpoint survey responses for Modern Classroom Fellows and their students relative to comparison teachers and their students. Therefore, this analysis revealed differences in beliefs for teachers and students who participated in the Modern Classrooms approach relative to those who did not. While Fellow and comparison teachers and students were reasonably similar on background characteristics, this study cannot rule out the possibility that Fellows or their students differed from comparison teachers or their students in other ways.

The second type of analysis examined changes in survey responses over time, from the start to the midpoint of the year, and was conducted for Fellows in their first year of Modern Classrooms implementation and their students only. This analysis showed to what extent first-year Fellows and their students improved their survey scores over time and after participating in the Modern Classrooms model. To ensure that findings reflected changes over time, as opposed to different student and teacher samples at each time point, the sample for this analysis was limited to first-year Fellows

[4] Wolf, R. (2019). *Survey findings for the 2018–19 implementation of The Modern Classrooms Project.* Towson, MD: Center for Research and Reform in Education (CRRE), Johns Hopkins University. http://jhir.library.jhu.edu/handle/1774.2/62370

and their students who took the survey at both time points.[5] While it is likely that changes in survey responses were the result of Modern Classrooms implementation, this study cannot rule out all factors that may have influenced changes over time.

All surveys contained a 5-point Likert scale. Survey responses were then recoded to combine "strongly agree" with "agree" responses, and the other responses (e.g., neutral, disagree, or strongly disagree) were coded as lack of agreement. Then, the percentages of participants who agreed with items were analyzed using Chi-square tests. This approach limited the possibility that observed differences between Fellow and comparison teachers or their students, or changes over time for Fellows and their students were due to chance alone.

For Fellows and their students, we also descriptively explored patterns in pre- and mid-year survey responses by grade level (e.g., middle or high) and course subject type to see if there appeared to be differences according to these characteristics. Given the small sample sizes for Fellows when further disaggregating the data, no statistical tests were conducted. Therefore, these findings depict general trends but do not determine if there were statistical differences among the groups.

Findings

Because The Modern Classrooms Project is a teacher professional development program, effects of the program are best understood by teachers and their perceptions about changes to their practice. Students may also have perceived changes in classroom inputs or outcomes, particularly given that Modern Classrooms alters traditional classroom structures. The next section details findings regarding changes in teacher practices or beliefs, and the subsequent section discusses student perceptions of the learning and support they received.

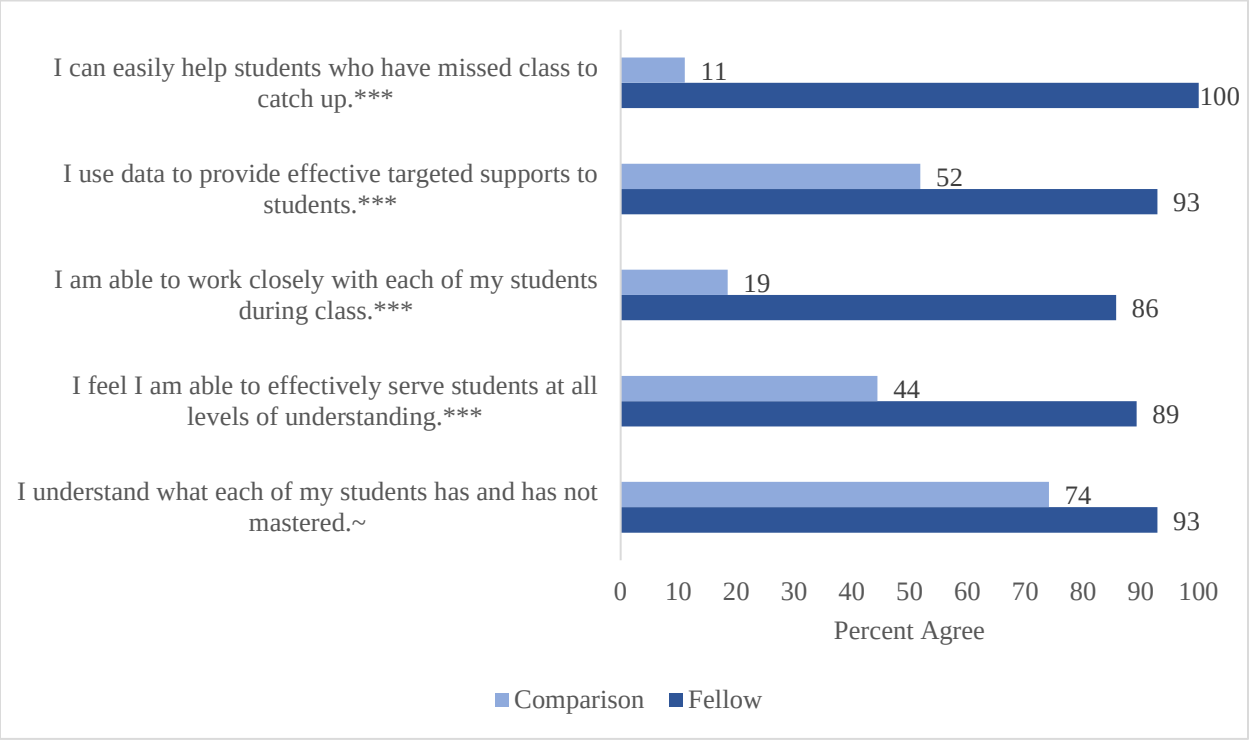
Teacher Practices

Differentiation. One of the key findings is that Modern Classroom Fellows felt significantly[6] more capable of differentiating instruction than comparison teachers. At the midpoint of the school year, 89% of Fellows indicated that they were able to meet students at different levels of understanding compared with 44% of comparison teachers. A vast majority of Fellows (86%) also reported that they were able to work closely with each student during class, while only 19% of comparison teachers reported the same. A greater percentage of Fellows (93%) than comparison teachers (74%) also indicated that they better understood what each student had and had not mastered.

[5] About 68% of Fellows took the survey at both time points, and 76% of Fellows' students took the survey at both time points.
[6] "Significant" in this report refers to statistical significance.

Figure 1 shows Fellows' and comparison teachers' responses regarding their ability to effectively differentiate instruction for their students.

Figure 1. Ability to differentiate instruction for Fellow and comparison teachers



NOTE—~p<.10, ***p<.001.

In open-ended survey responses, Fellows wrote about the benefits of implementing Modern Classrooms. One Fellow commented,

> *I have an incredibly diverse group of learners and I feel that I am able to address their various levels much better using the Modern Classroom model. Replacing whole group instruction with videos has allowed me to spend more time with all students individually.*

One advantage of working individually with students was that Fellows could target supports to struggling students or students who missed class. At mid-year, 93% of Fellows reported being able to provide targeted supports to students compared with 52% of comparison teachers, and 100% of Fellows indicated that they were able to catch up students who had missed class compared with only 11% of comparison teachers. Another Fellow commented,

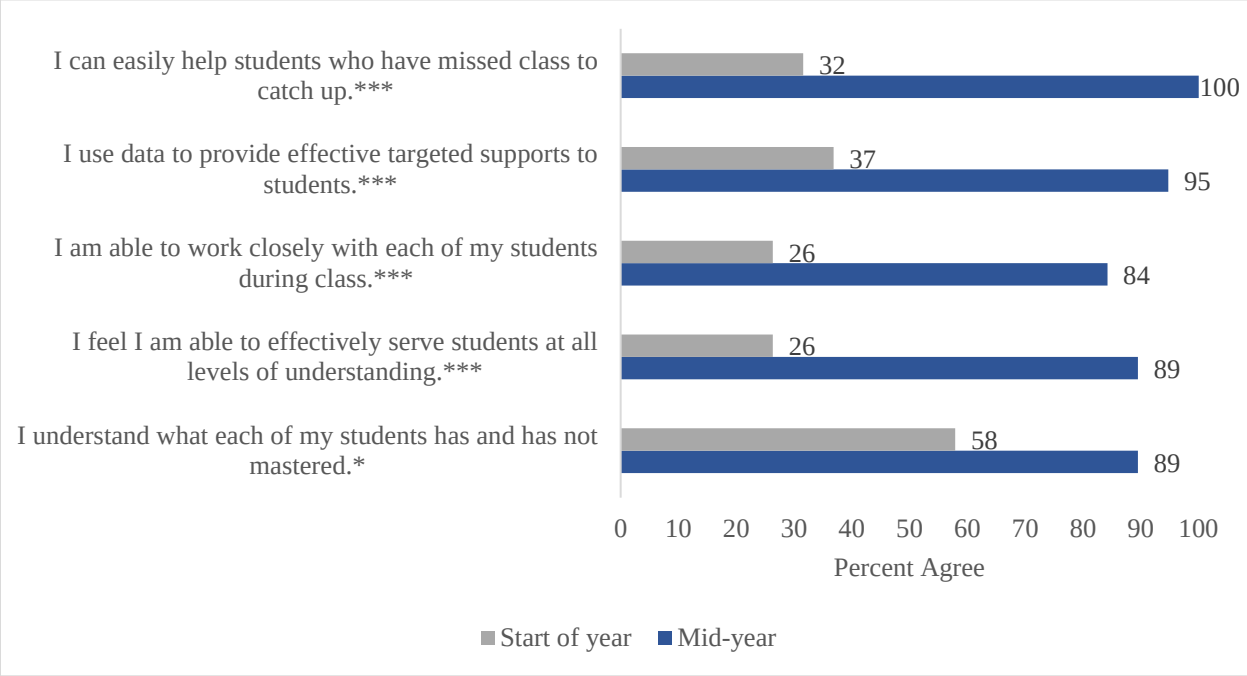
> *I love the amount of targeted feedback I can give students in real time. I feel like I am meeting students at their specific levels and allowing them time to think and process.*

Another advantage of working one-on-one with students was that teachers were also better able to support both struggling and advanced students. One Fellow noted,

> *I am able to check in with most students during most class periods; previously, I was usually focused on the most reluctant learners for most of the time.*

One question is whether Fellows were initially more effective at differentiating instruction than comparison teachers, or if Fellows improved in their ability to differentiate instruction as a result of implementing Modern Classrooms. From the start to the midpoint of the school year, first-year Fellows made significant gains in their reported ability to differentiate instruction, as shown in Figure 2. At the start of the school year, between one-fourth and one-third of Fellows felt that they could effectively differentiate instruction, whereas at mid-year, nearly all Fellows (84–100%) felt capable of effectively differentiating instruction. A greater percentage of Fellows also reported knowing what each of their students had and had not mastered after using Modern Classrooms (58% at start versus 89% at mid-year). These findings indicate that implementing Modern Classrooms resulted in more effective differentiation of instruction for students.

Figure 2. Ability to differentiate instruction for Fellows over time



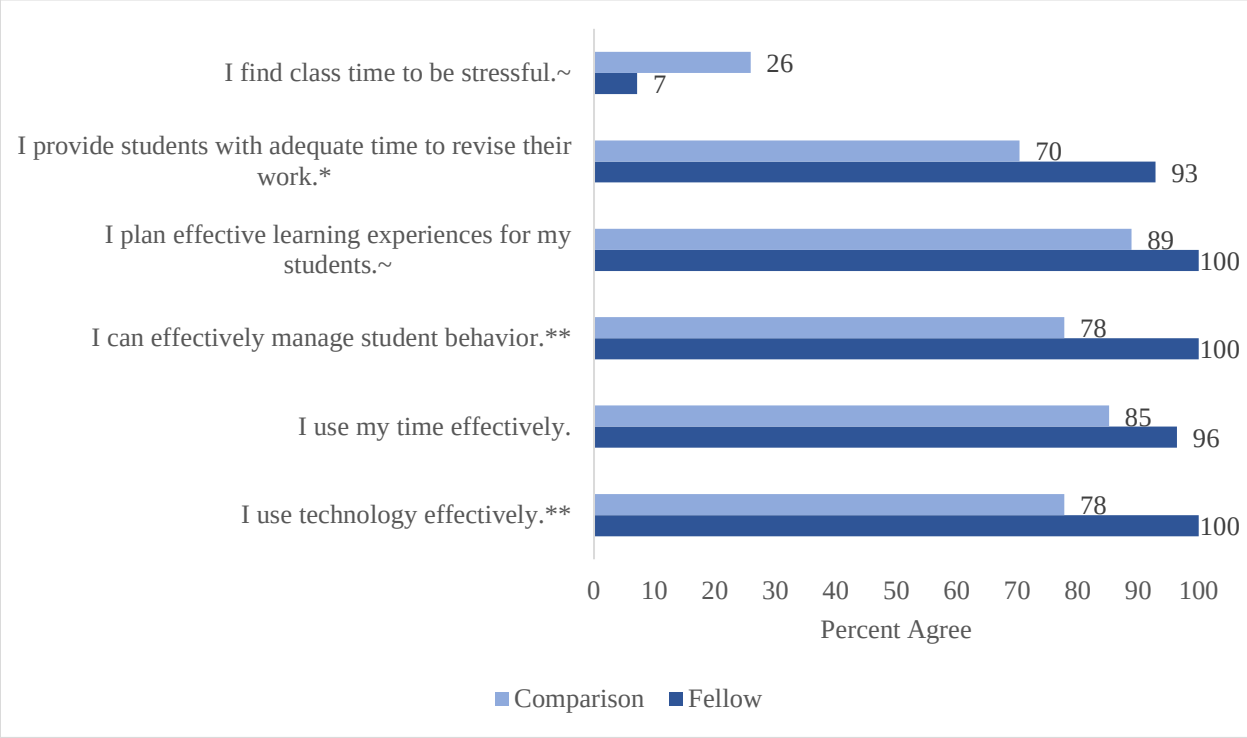
NOTE—*p<.05, ***p<.001.

Effective classroom practices. Significantly greater percentages of Fellows than comparison teachers reported using some effective classroom practices at the midpoint of the year:

- Providing students with adequate time to complete work (93% for Fellows versus 70% for comparison)
- Planning effective lessons (100% for Fellows versus 89% for comparison)
- Managing student behavior (100% for Fellows versus 78% for comparison)
- Using technology effectively (100% for Fellows versus 78% for comparison)

There were no significant differences between Fellows and comparison teachers in using time effectively at the midpoint of the year. Figure 3 shows differences in reported classroom practices for Fellow and comparison teachers.

Figure 3. Effective classroom practices for Fellow and comparison teachers



NOTE—~p<.10, *p<.05, **p<.01.

Another important difference between Fellows and comparison teachers was that Fellows found class time to be stressful to a significantly lesser extent than did comparison teachers. Twenty-six percent of comparison teachers found class time to be stressful at mid-year compared with only 7% of Fellows.

Implementing the Modern Classrooms model also appeared to reduce teacher stress over time for first-year Fellows. About 20% of Fellows found class time to be stressful before implementation of Modern Classrooms, while 0% found class time to be stressful after implementing Modern Classrooms.[7] Fellows largely attributed lower stress

[7] The percentages (7% versus 0%) of Fellows who found class time to be stressful at the mid-year point were based on different samples. The 7% included first- and second-year Fellows. The 0% included only first-year Fellows with non-missing survey data at the start and the midpoint of the school year.

to the use of the instructional videos and self-pacing for students, which allowed for a less stressful classroom environment. One Fellow commented,

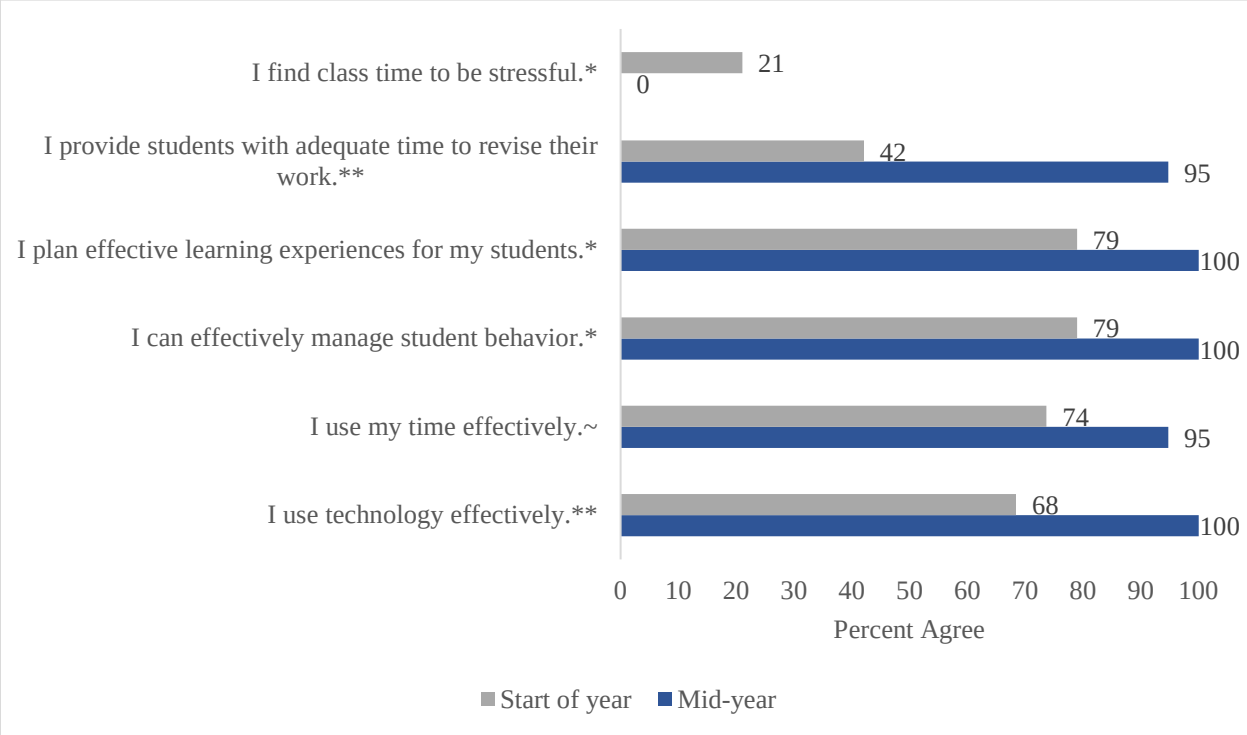
> *This has been a total game changer for me. From instantaneous feedback, to self-pacing, my classroom is calm. People are moving at their own pace and I am so much more relaxed.*

Another Fellow stated,

> *It allows for a peaceful experience in the classroom. I have not raised my voice one time this year. I feel so prepared and ready for the day when the day starts.*

As shown in Figure 4, first-year Fellows also reported significant improvements over time in all classroom practices that were surveyed. These improvements likely contributed to lower stress levels for some Fellows.

Figure 4. Effective classroom practices for Fellows over time

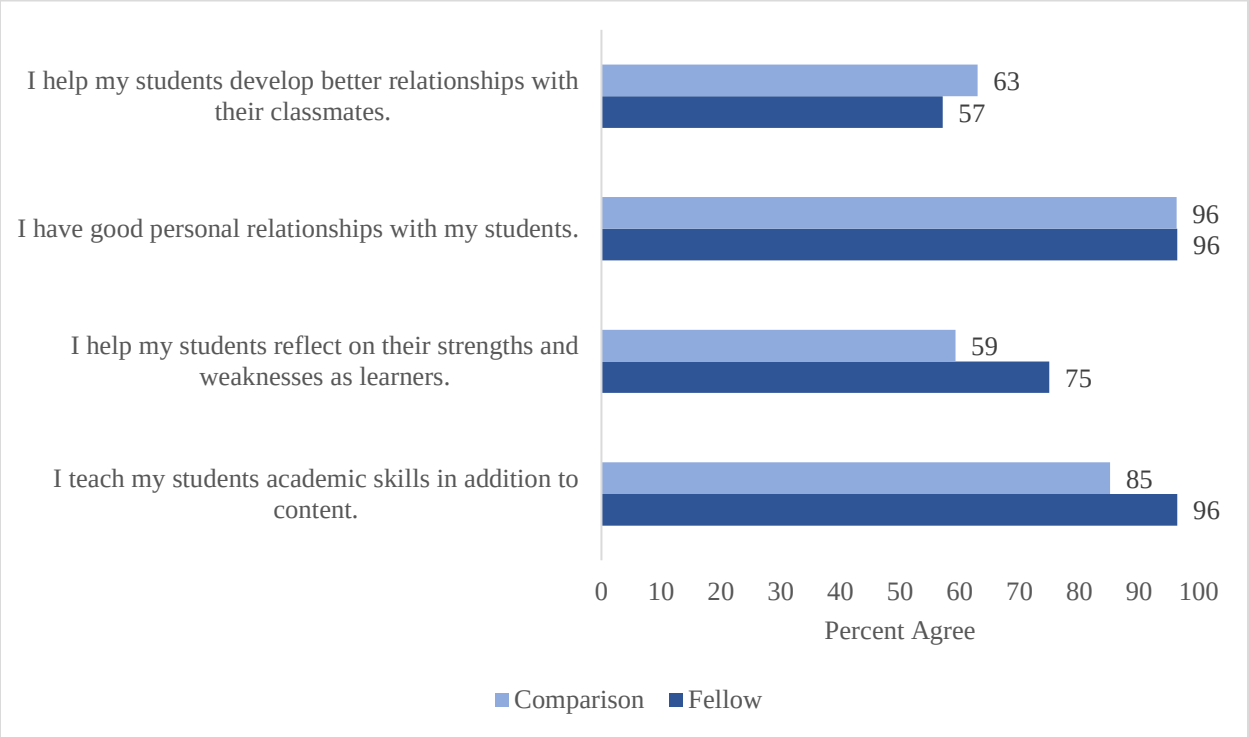


NOTE—~p<.10, *p<.05, **p<.01.

Student skills development. Beyond improving teacher practices, another goal of the Modern Classrooms model is to develop students' academic skills. Additionally, Modern Classrooms strives to create more opportunities for teachers and students to connect in meaningful ways, thus improving teacher-student and student-student relationships. Figure 5 shows how Fellow and comparison teachers reported

their students' skills development and classroom relationships at the midpoint of the school year.

Figure 5. Student skills development for Fellow and comparison teachers

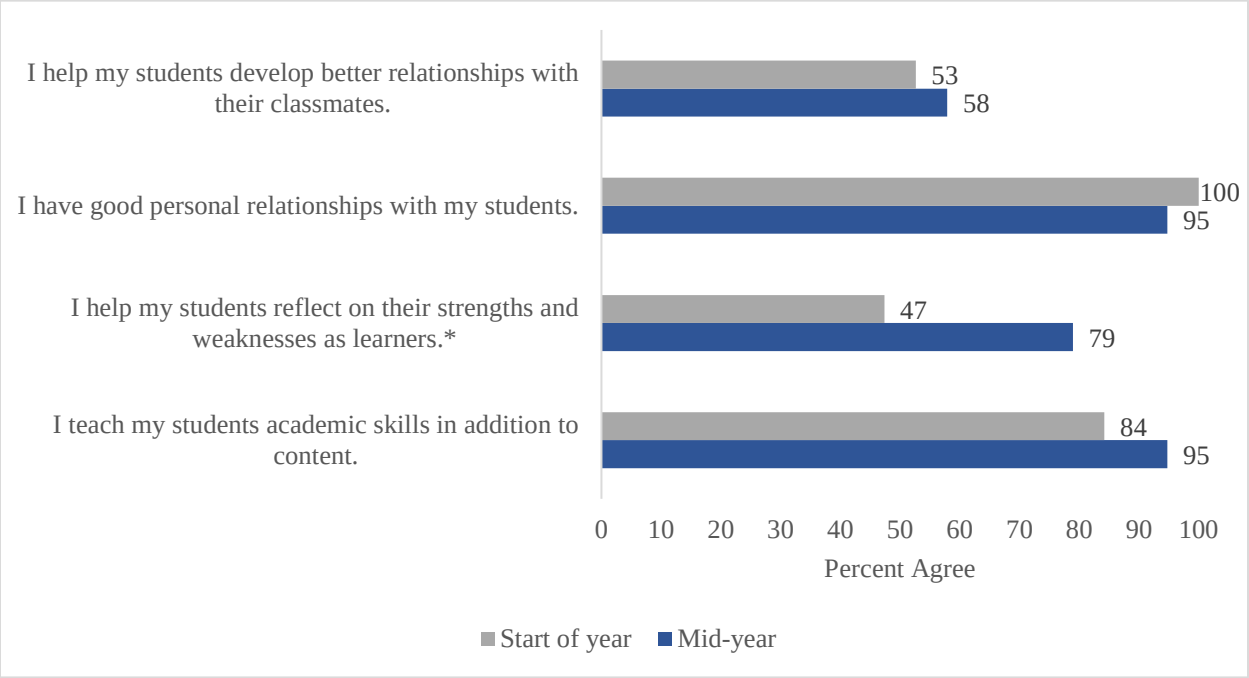


NOTE—There were no statistically significant differences.

There were no significant reported differences between Fellow and comparison teachers in these areas at the mid-year point, however. One reason why there may not have been a difference in teacher-student relationships between Fellows and comparison teachers is that nearly all teachers (Fellow and comparison) agreed at mid-year that they had good relationships with their students.

Over time, first-year Fellows reported a significant improvement in helping their students reflect on their strengths and weaknesses (see Figure 6). At mid-year, 79% of Fellows indicated that they provided such help, compared with only 47% of Fellows at the start of the year. This finding is consistent with the theory of action of the Modern Classrooms model, which promotes student reflection and self-directed learning. There were no significant differences on other student skills for Fellows over time.

Figure 6. Student skills development for Fellows over time



NOTE—*p<.05.

Though all Fellows had positive relationships with their students prior to implementing Modern Classrooms, many Fellows commented in open-ended responses that implementing Modern Classrooms had positively impacted their relationships with students. For some teachers, this was the greatest benefit in implementing Modern Classrooms. One Fellow stated,

> *Improving relationships may be the single biggest benefit that I have gained from Modern Classrooms. Purposeful planning has allowed me to check in with every single student at least once per class period.*

Several Fellows pointed to the instructional video component of the program as being the key agent of change in their classrooms because it allowed them more time to meet with students one-on-one and get to know them better as individuals. One Fellow summarized,

> *I have never had stronger relationships due to my ability to check in with each student and to step into the hall, as needed, for a one-on-one conference without disrupting the flow of the class.*

Beliefs about teaching. Fellows reported significantly greater professional growth and self-efficacy than did comparison teachers (see Figure 7). Specifically, 96% of Fellows felt that they were growing professionally at mid-year compared with 70% of comparison teachers. Eighty-nine percent of Fellows also felt that they were doing the best that they could at the mid-year point compared with 70% of comparison teachers.

Both Fellow and comparison teachers generally had a positive outlook on teaching, including very positive beliefs about preparing students for the future and enjoyment of teaching. As such, there were no significant differences in beliefs about these topics for Fellow and comparison teachers.

Figure 7. Reported beliefs for Fellow and comparison teachers

NOTE—~p<.10, **p<.01.

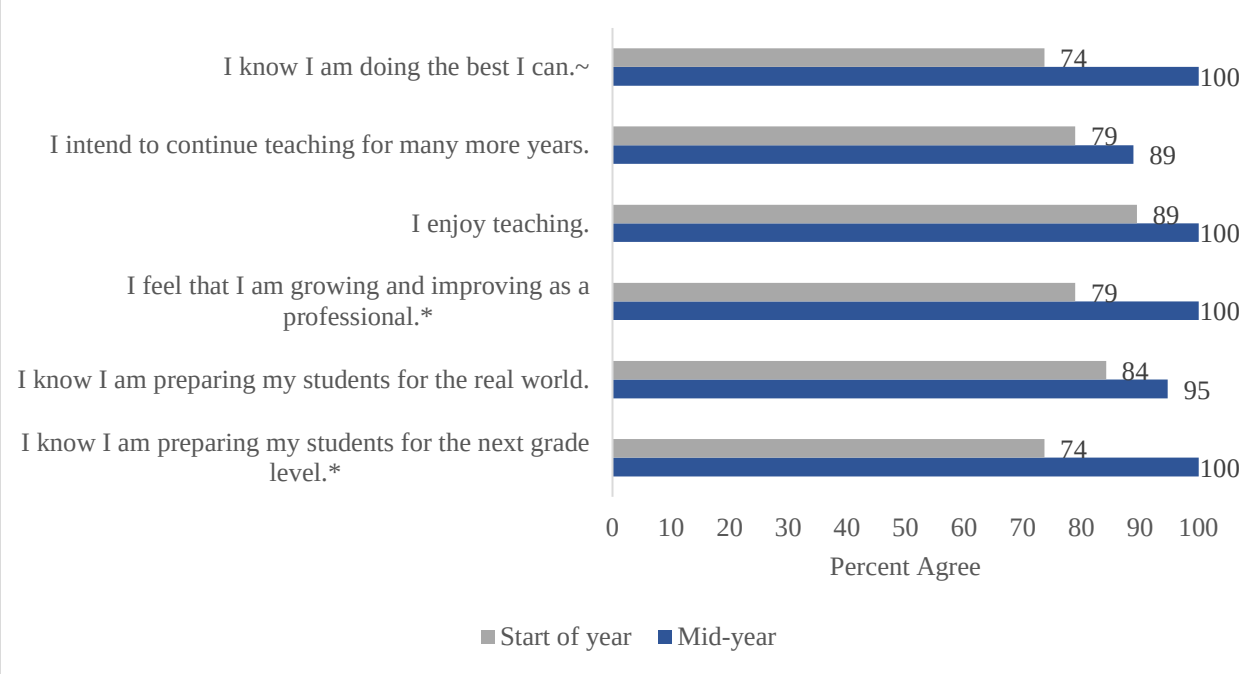
Over time, first-year Fellows reported significant improvements in professional growth opportunities, self-efficacy, and preparing students for the next grade level, as shown in Figure 8. Significant gains were associated with growing and improving as a professional, and preparing students for the next grade level. Even though Fellows generally held very positive perceptions about teaching prior to implementing Modern Classrooms, many Fellows commented that the program had improved their outlook. Some teachers reported feeling "reinvigorated" or "excited" to teach. One Fellow noted,

> *I enjoy teaching more now. I am enjoying teaching my Modern Classrooms classes over my normal classes.*

Another Fellow stated,

> *My Modern Classroom has made me feel that teaching as a career is more sustainable for the long term as I feel much less burned out at the end of every day.*

Figure 8. Reported beliefs for Fellows over time



NOTE—~p<.10, *p<.05.

A small number of Fellows also listed barriers to program implementation, which included a lot of time required initially to make the instructional videos, and challenges in implementing the program when school administrators were not supportive. Yet overall, Fellows reported positive changes to their practice and well-being as a result of implementing the Modern Classrooms approach. One Fellow went so far to say:

> *This training has seriously changed my life. I appreciate my students more, and they appreciate me more.*

Differences in responses by grade level and course subject. We also descriptively examined differences in first-year Fellows' survey responses by grade level (e.g., middle or high) and course subject (English/Social Studies or Math/Science)[8]. Importantly, Modern Classrooms appeared to equally benefit middle and high school teachers, as well as teachers of English/Social Studies and Math/Science. One difference among the subgroups of Fellows, however, was that high school teachers had slightly more positive responses, at both the start and midpoint of the year, than middle school teachers. Similarly, teachers of English/Social Studies had slightly more positive responses at both time points than teachers of Math/Science. Graphs showing these descriptive trends are provided in Appendix A.

[8] Elective subjects were not included for this subgroup analysis.

Student Reactions

Self-directed learning and skills development. One of the key features of Modern Classrooms is self-directed learning for students. Students in Modern Classrooms were significantly more likely to agree that they engaged in self-directed learning than comparison students at mid-year, as shown in Figure 9:

- Teaching themselves new academic content (76% versus 69%)
- Catching up if they missed class (83% versus 70%)
- Completing challenging assignments without giving up (77% versus 71%)

In open-ended survey responses, about 35% of students commented that they benefitted the most from the self-paced learning component of Modern Classrooms. One student remarked,

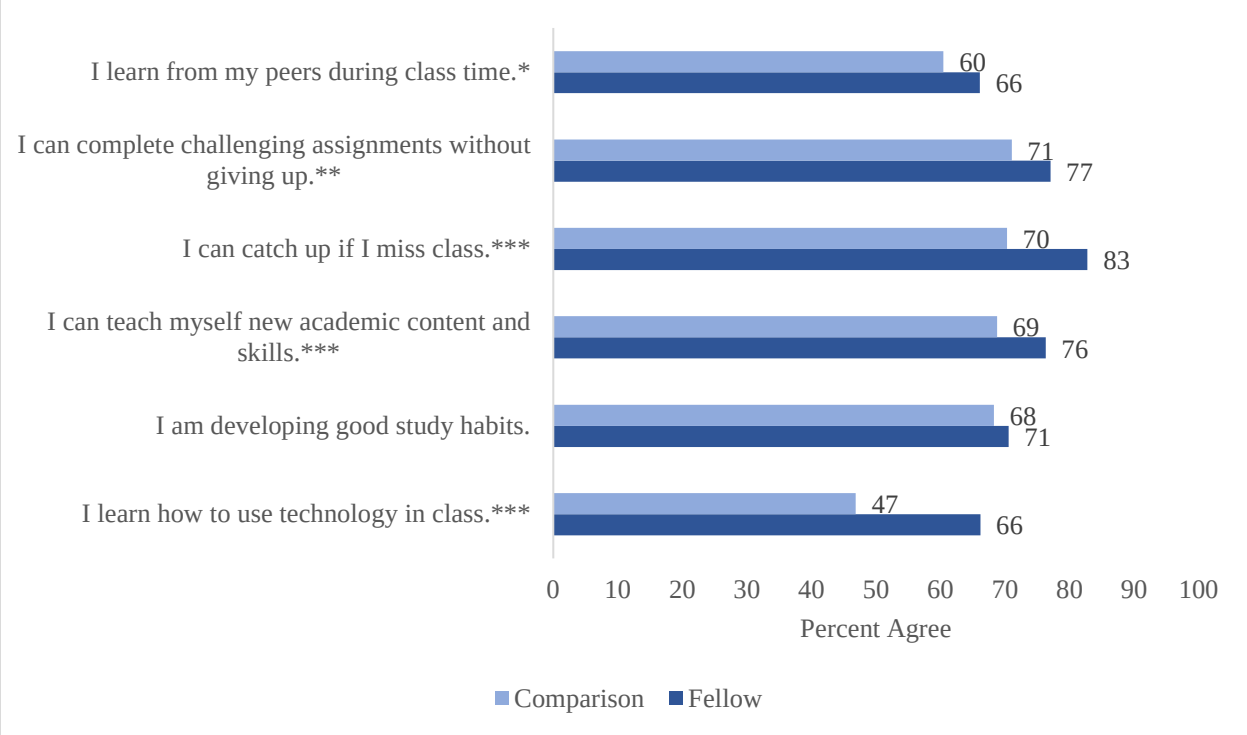
> *The thing I like most about this class is that if I am struggling on a topic I can take my time and self-pace myself in order for me to learn it, but if I understand the content well, I can go faster.*

Another student stated,

> *I enjoy the own pace aspect. It gives kids an opportunity to be accountable. It also helps when you miss school and need to catch up, because its RIGHT THERE!*

Modern Classrooms students also had significantly higher rates of learning from their peers during class than comparison students (66% versus 60%), as shown in Figure 9. Significantly more Modern Classrooms than comparison students also reported that they learned how to use technology in class (66% versus 47%), which is unsurprising since Modern Classrooms integrates technology into instruction. Conversely, there were no significant differences in Modern Classrooms and comparison students in developing good study habits.

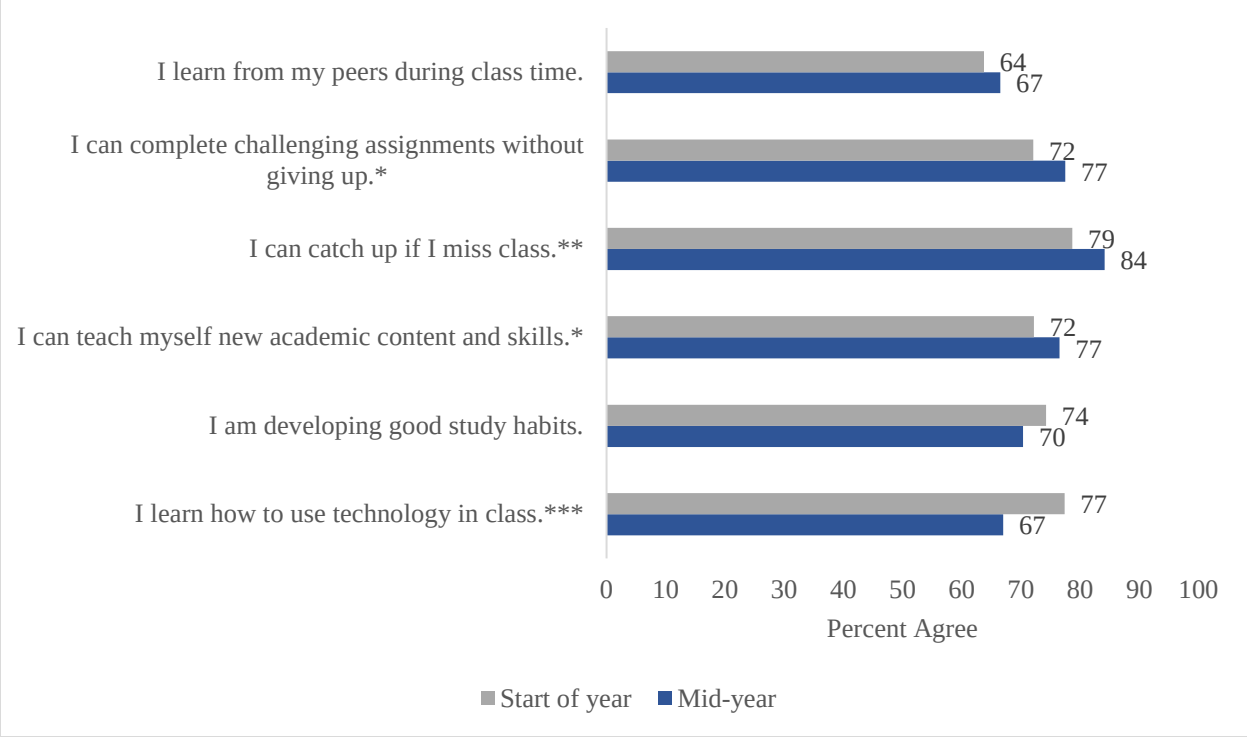
Figure 9. Skills development for Modern Classrooms and comparison students



NOTE—*p<.05, **p<.01, ***p<.001.

Modern Classrooms students reported significant improvements over time in each of the self-directed learning behaviors, as well as learning how to use technology during class, as shown in Figure 10. Conversely, Modern Classrooms students reported similar levels of study habits and peer learning over time. These findings imply that Modern Classrooms had a greater direct effect on student self-directed learning than other academic skillsets.

Figure 10. Skills development for Modern Classrooms students over time



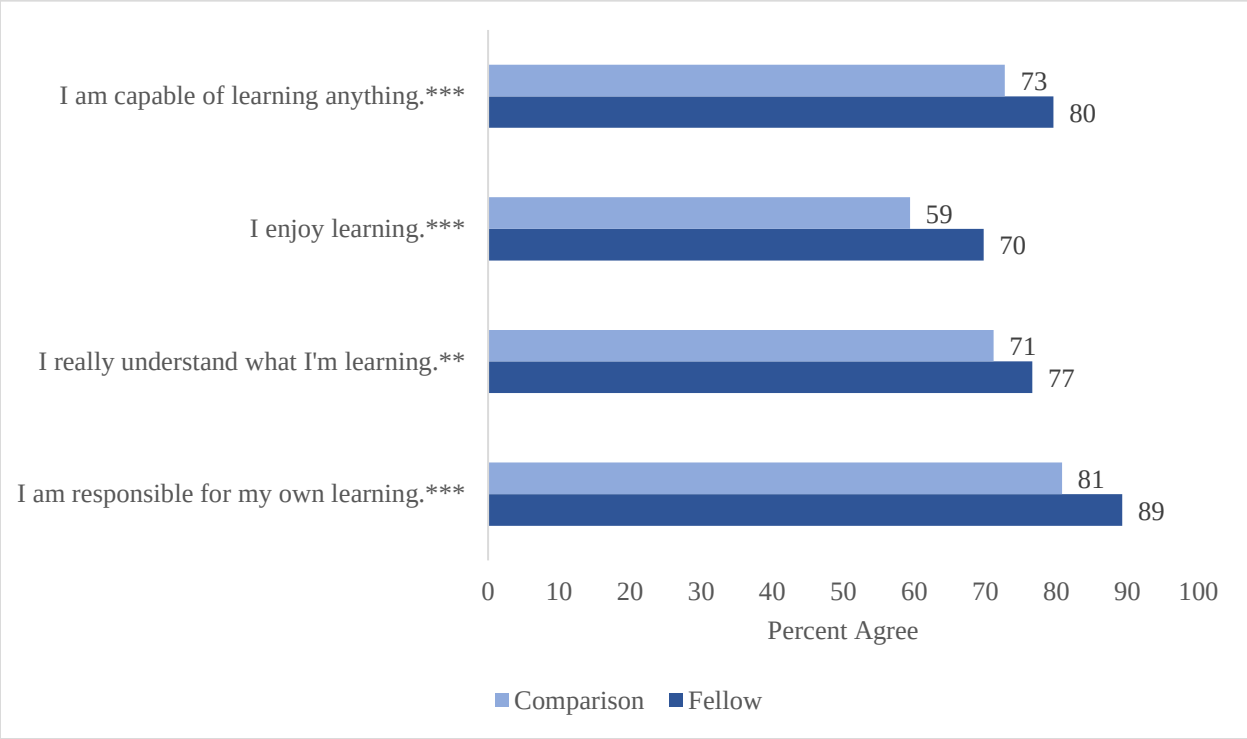
NOTE—*p<.05, **p<.01, ***p<.001.

Self-efficacy. The Modern Classrooms approach provides students with greater autonomy of their own learning, which can lead to increased student self-efficacy. Relative to comparison students, Modern Classrooms students reported significantly higher rates of agreement at mid-year to items that gauged student perceptions about their abilities to learn:

- Capable of learning anything (80% versus 73%)
- Enjoy learning (70% versus 59%)
- Understand what they were learning (77% versus 71%)
- Were responsible for own learning (89% versus 81%)

These differences are shown in Figure 11.

Figure 11. Self-efficacy for Modern Classrooms and comparison students



NOTE—**p<.01, ***p<.001.

Modern Classrooms students also reported positive changes over time in these areas of self-efficacy, as shown in Figure 12. Students commented in the open-ended survey responses that the self-paced component of Modern Classrooms enabled them to take greater responsibility for their own learning. One student explained,

> *I really like how we can immediately work on the lessons that we are assigned, or whichever lesson that we're on, because we are the ones managing our work and we are the ones responsible for staying on pace.*

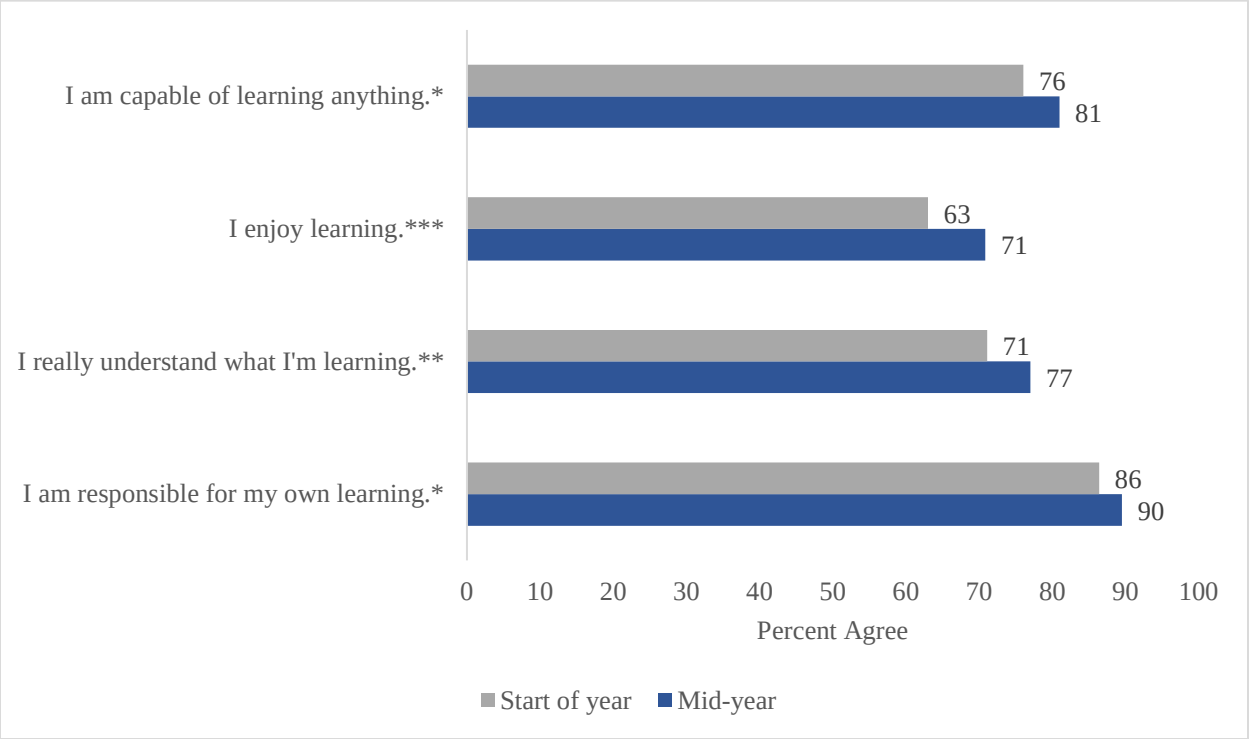
Greater responsibility for their own learning yielded greater self-efficacy to learn:

> *I like how we learn. We learn at our own pace. In this class, the way we learn isn't just memorizing for a test, the stuff you learn actually sticks with you.*

As a result, the majority of students felt that they could be successful and some had less learning-related stress. As one student summarized,

> *I like that it is truly a class in which you can thrive if you study.*

Figure 12. Self-efficacy for Modern Classrooms students over time



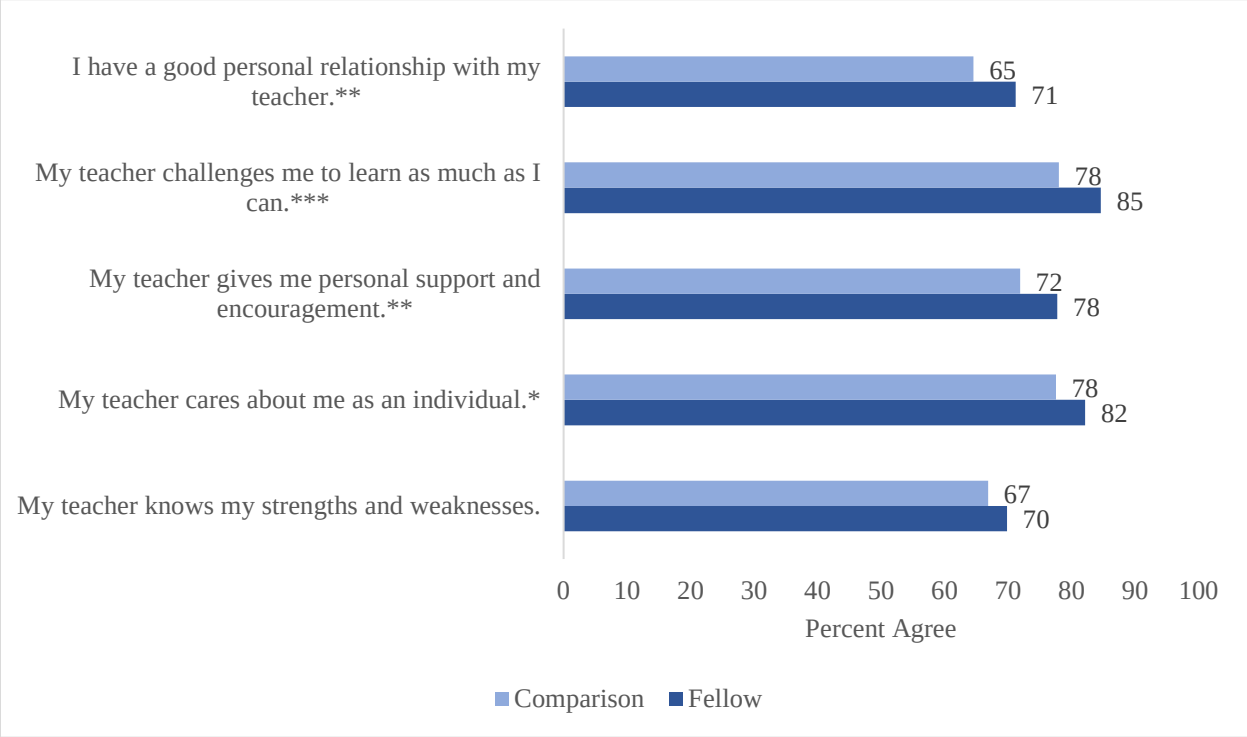
NOTE—*p<.05, **p<.01, ***p<.001.

Teacher-student relationships. As shown in Figure 13, Modern Classrooms students rated their teachers significantly more favorably than comparison students at the mid-year point in terms of:

- Having good personal relationships with them (71% versus 65%)
- Being challenged by teachers (85% versus 78%)
- Receiving personal support and encouragement (78% versus 72%)
- Being cared for as an individual (82% versus 78%)

There were no significant differences between Modern Classrooms and comparison students in whether their teacher knew their strengths and weaknesses.

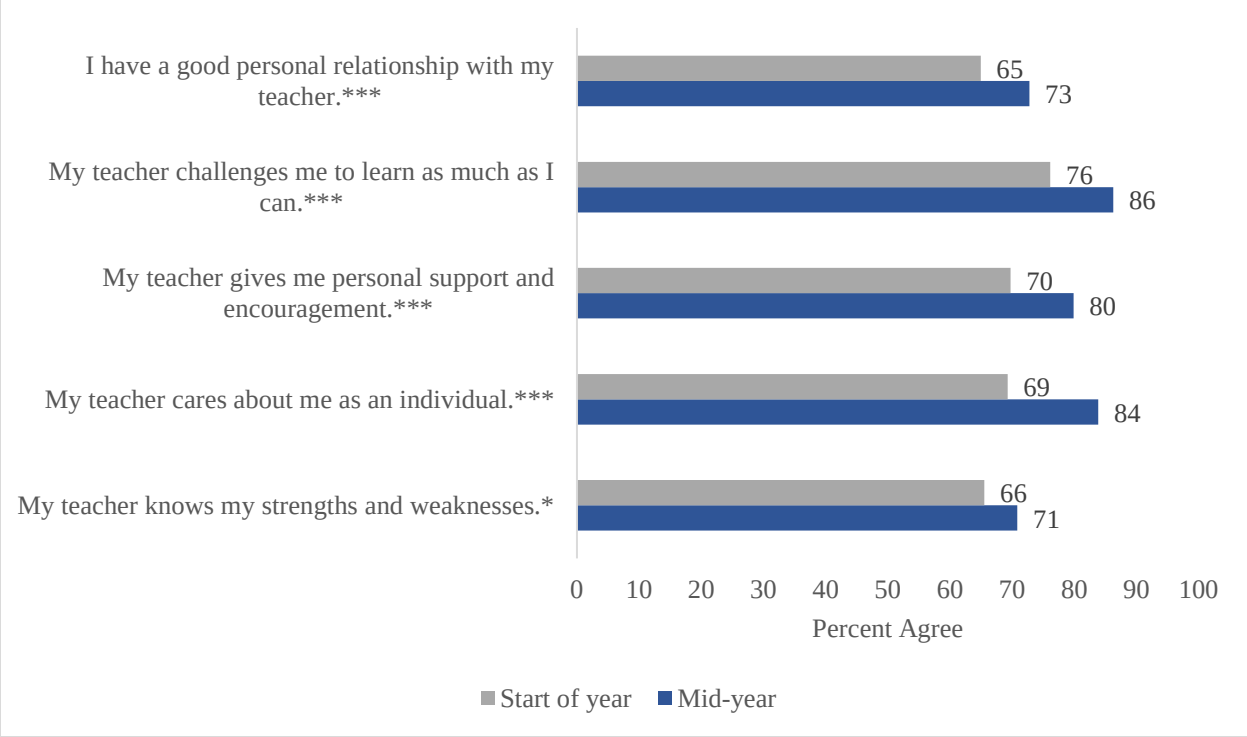
Figure 13. Teacher-student relationships for Modern Classrooms and comparison students



NOTE—*p<.05, **p<.01, ***p<.001.

Modern Classrooms students reported significant improvements in all of these teacher-student interactions compared with their past teachers, as shown in Figure 14. Modern Classrooms students also indicated that Fellows knew their strengths and weaknesses to a greater extent than their past teachers (71% versus 66%), but this improvement did not reach statistical significance when compared with comparison students.

Figure 14. Teacher-student relationships for Modern Classrooms students over time



NOTE—*p<.05, ***p<.001.

When asked what they liked best about their Modern Classrooms course, roughly 22% of students listed their teacher or his/her teaching style. Many students reported being able to receive more support from their teachers in their Modern Classroom. One student remarked,

> *My teacher interacts with us; she helps everyone as a whole and helps anybody who needs individual help.*

Students also mentioned feeling supported by their teachers when the course material was challenging:

> *I like that we're always learning about new things every day and that the activities force you to work hard and that our teacher makes us work hard and not give up.*

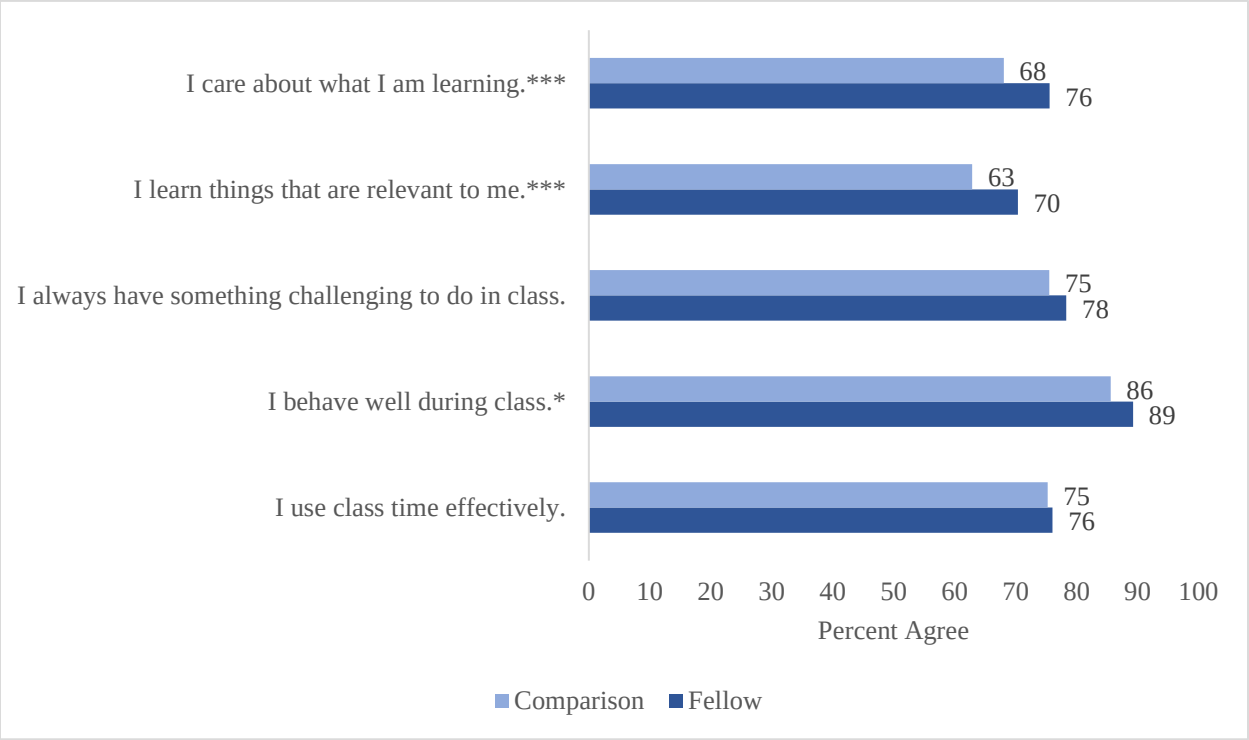
Finally, some students drew a link between the Modern Classrooms teaching style and a "comfortable," "relaxing," and "chill" classroom atmosphere. One student wrote,

> *The fact that there is not a teacher hovering above you yet being available when needed creates a calm peaceful environment where learning is possible.*

Modern Classrooms students generally held very positive perceptions about their teachers and the classroom environments created by them.

Engagement. As revealed in Figure 15, Modern Classrooms students reported being significantly more engaged than comparison students at mid-year in caring about what they were learning (76% versus 68%), learning things they felt relevant to them (70% versus 63%), and behaving during class (89% versus 86%). There were no significant differences between Modern Classrooms and comparison students in using class time effectively or always having something challenging to do.

Figure 15. Engagement for Modern Classrooms and comparison students



NOTE—*p<.05, ***p<.001.

In open-ended survey responses, about 20% of Modern Classrooms students specifically commented that they liked the video lessons and thought the videos were engaging. One student said,

> *What I like most about this class is that it is very hands-on… We can go deeper into what we're learning and learn whatever we're curious about.*

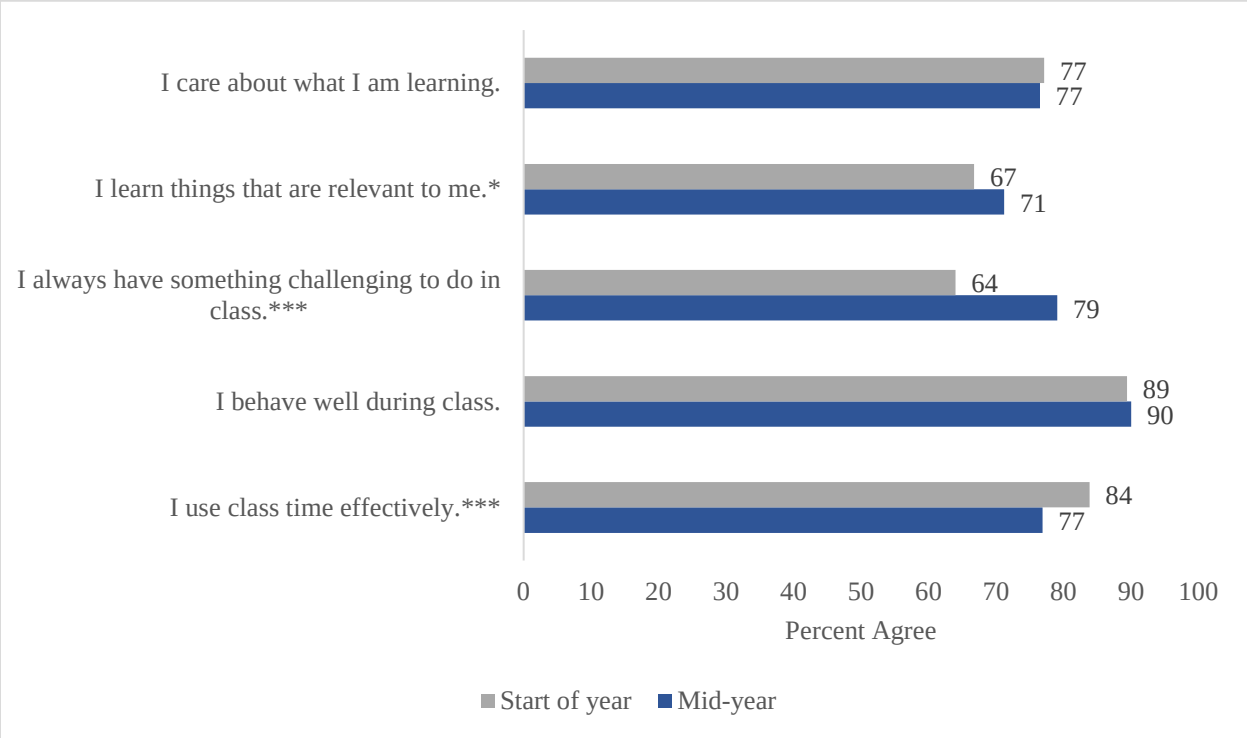
Another student stated,

> *This whole new approach to teaching helps everyone's learning because it's visual, verbal, and interactive.*

Yet a minority (7%) of students commented that they would like Modern Classrooms to be even more interactive by incorporating more activities, games, or online interactions.

Over time, significantly more students (+15%) felt that participating in a Modern Classrooms course appeared to ensure that students always had something challenging to do (see Figure 16). Similarly, there was a small, significant increase over time in perceptions about making learning relevant. There were no significant differences over time for Modern Classrooms students in student behavior or caring about what they were learning. Interestingly, 7% fewer Modern Classrooms students felt that they were using class time effectively at mid-year than at the start of the year. Given that Modern Classrooms requires students to take responsibility for their own learning, students may have been more cognizant of being off-task in a Modern Classrooms course.

Figure 16. Engagement for Modern Classrooms students over time



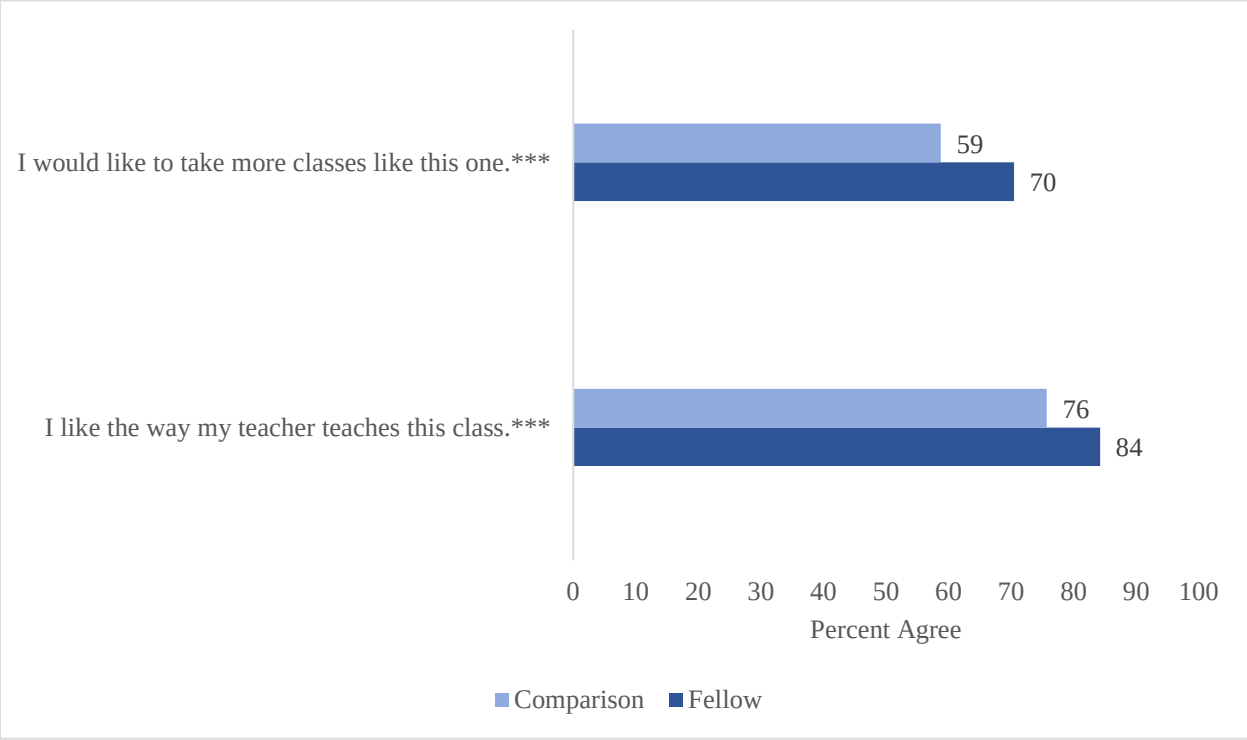
NOTE—*p<.05, ***p<.001.

Taken together, these findings suggest that there were likely some improvements in student engagement as a result of Modern Classrooms, but effects on student engagement were likely smaller than program effects on other outcomes, such as self-directed learning. Moreover, student engagement is affected by a number of factors beyond teacher style.

Overall course rating. Overall, Modern Classrooms classes were rated significantly more positively by students than comparison classes (see Figure 17). At the mid-year point, significantly more (70%) Modern Classrooms students wanted to take

more courses similar to their Modern Classrooms course than comparison students (59%) who wanted to take more courses similar to their traditional one. Modern Classrooms students also had significantly higher ratings of the classroom instruction. At the mid-year point, 84% of Modern Classrooms students indicated that they liked the way their teacher taught the course compared with 76% of comparison students.

Figure 17. Overall class rating for Modern Classrooms and comparison students



NOTE—***p<.001.

When Modern Classrooms students were asked how the class could be improved, notably, half who replied indicated that they would not change anything. One student stated,

> *I wouldn't change anything about this class. I really enjoy this type of classroom setting.*

On the other hand, a minority of students (about 10%) indicated that they would prefer more traditional or "old school" lecturing. These students expressed the need for a little more classroom structure, more interactions with their teachers and peers, and a few more reminders about assignments and deadlines. One student expressed,

> *I would change the modernization, because at first, it makes it feel like the students education is all up to them. It makes it feel like the teacher isn't actually teaching, but the teacher technically is, they are just doing it through*

> *technology, not the traditional way of standing in front of a board with everyone on the same pace.*

These students also advocated for a hybrid traditional and Modern Classrooms approach. One student stated,

> *I would have one day a week where the class sits down and goes over what we are learning with the teacher and to make sure everyone understands.*

A few students also indicated that a hybrid approach in which the teacher lectured some of the time would make it more "open" and "get students comfortable to ask [the] teacher for help when needed." These findings are consistent with other research that found some students prefer lecture style instruction despite learning more with other methods.[9]

Conclusion

In conclusion, this study yields overwhelming positive support for The Modern Classrooms Project from the perspective of both students and teachers who participated in the program during the 2019–20 school year. According to self-report survey data, Modern Classrooms benefitted both middle and high school teachers, as well as teachers of different academic subjects. Modern Classrooms appeared to have the strongest effects on teachers' abilities to differentiate instruction to individual students. That ability, along with more time to work one-on-one with students and other improvements in teacher practice created less stress for some teachers.

Students also reaped benefits from taking a Modern Classrooms course in terms of improvements in self-directed learning, self-efficacy to learn, and engagement in what they were learning. Students in Modern Classrooms also reported more favorable relationships with their teachers than did students in comparison classrooms. Some students also indicated that the Modern Classrooms approach led to more peaceful and "chill" classroom environments. Still, about 10% of students missed the more traditional lectures and advocated for a hybrid approach.

Given the descriptive nature of this study, and that the teacher and student samples were ones of convenience, this study cannot conclude that participation in The Modern Classrooms Project caused the positive changes identified in this report. However, in examining both differences in survey responses for both Modern Classrooms Fellows and comparison teachers and students, as well as changes over time for Modern Classrooms Fellows and students, this study provides more reliable evidence of the efficacy of Modern Classrooms than using just one method.

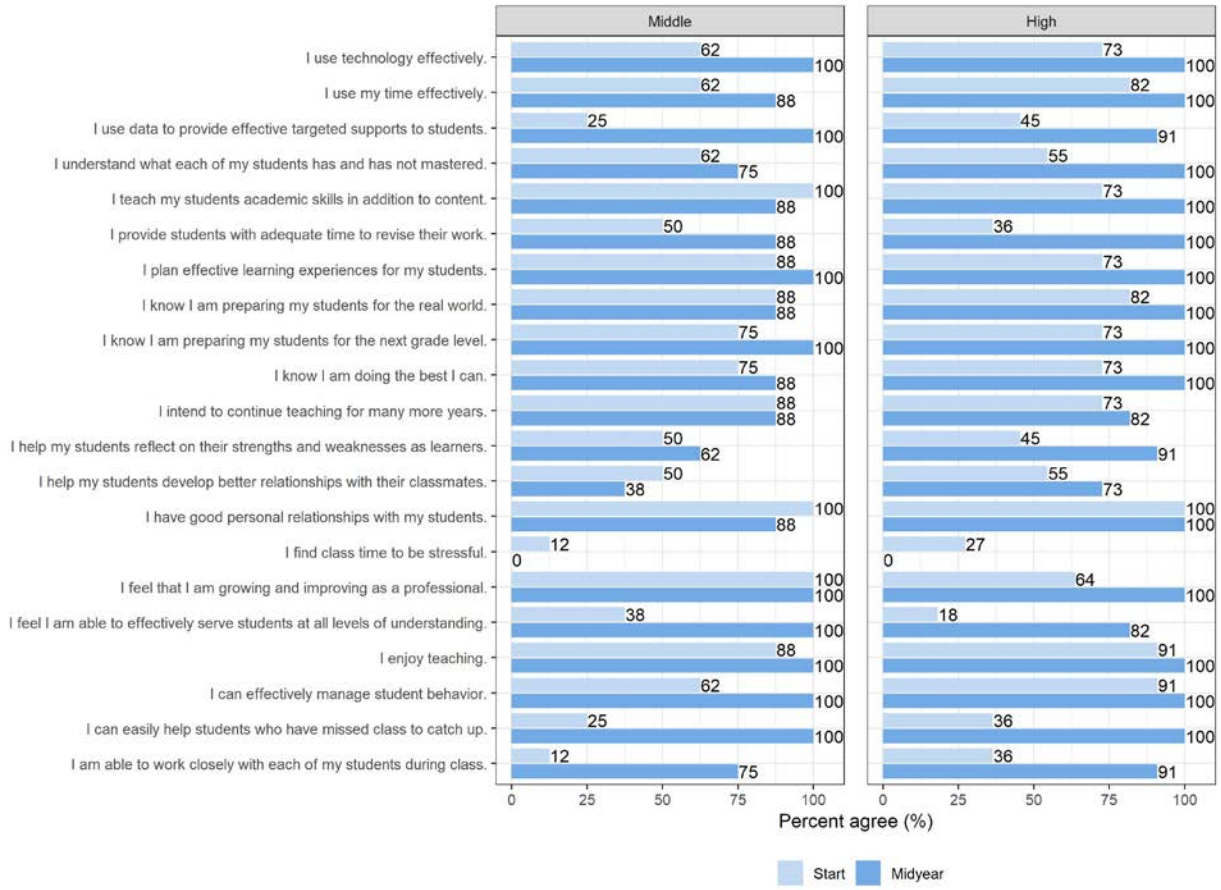
[9] See Students Think Lectures Are Best, But Research Suggests They're Wrong.

More research is needed to determine to what extent The Modern Classrooms Project results in improved student achievement. More quantitative and qualitative research is also needed to better understand the underlying mechanisms in which The Modern Classrooms Project may cause improvements in both teacher and student outcomes.

Appendix A: Descriptive Subgroup Results

This appendix provides graphs showing descriptive trends of first-year Fellows' and their students responses, by grade level (e.g., middle and high) and course subject (English/Social Studies or Math/Science)[10]. Sample sizes for comparison teachers and students were too small to disaggregate the survey data by grade level and course subject.

Figure 18. Results over time for Fellows by grade level



[10] Elective subjects were not included for this subgroup analysis.

Figure 19. Results over time for Fellows by course subject

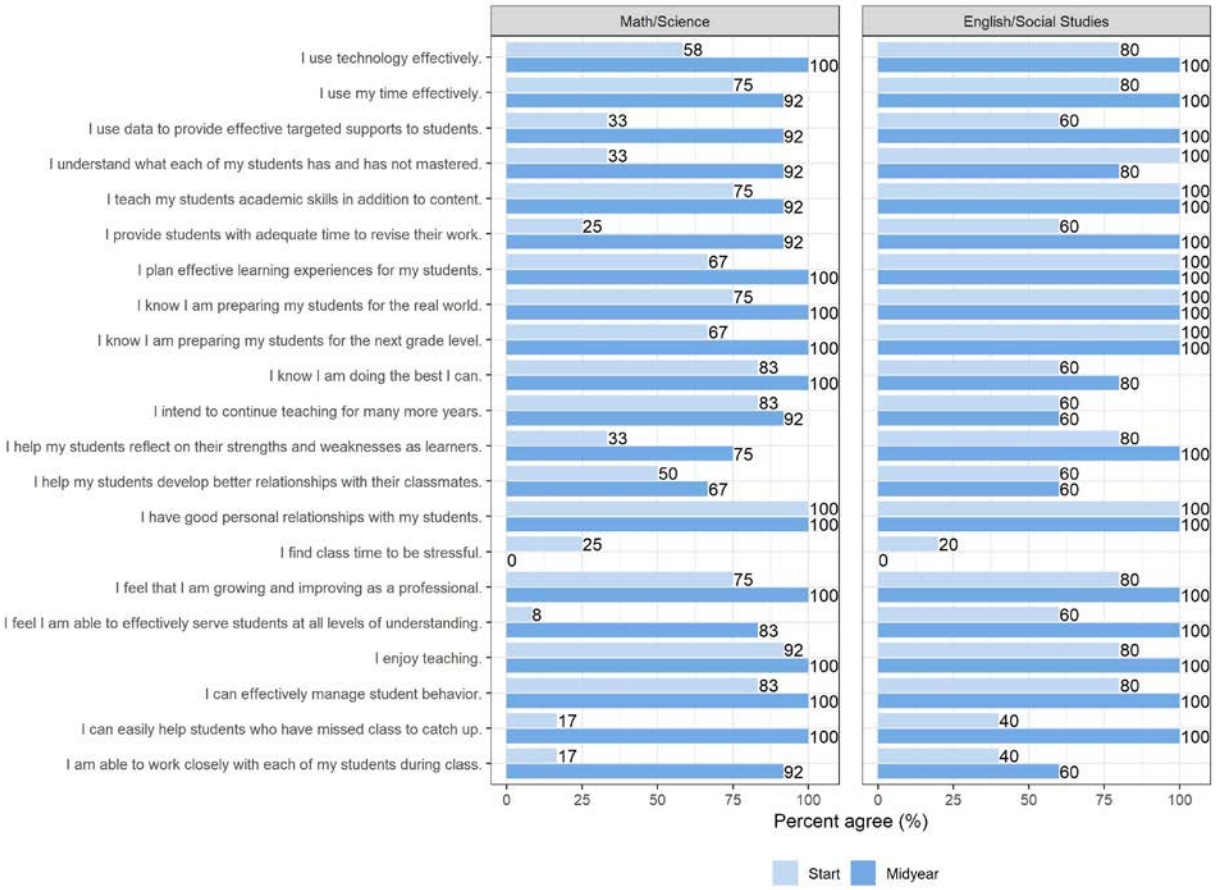


Figure 20. Results over time for students of Fellows by grade level

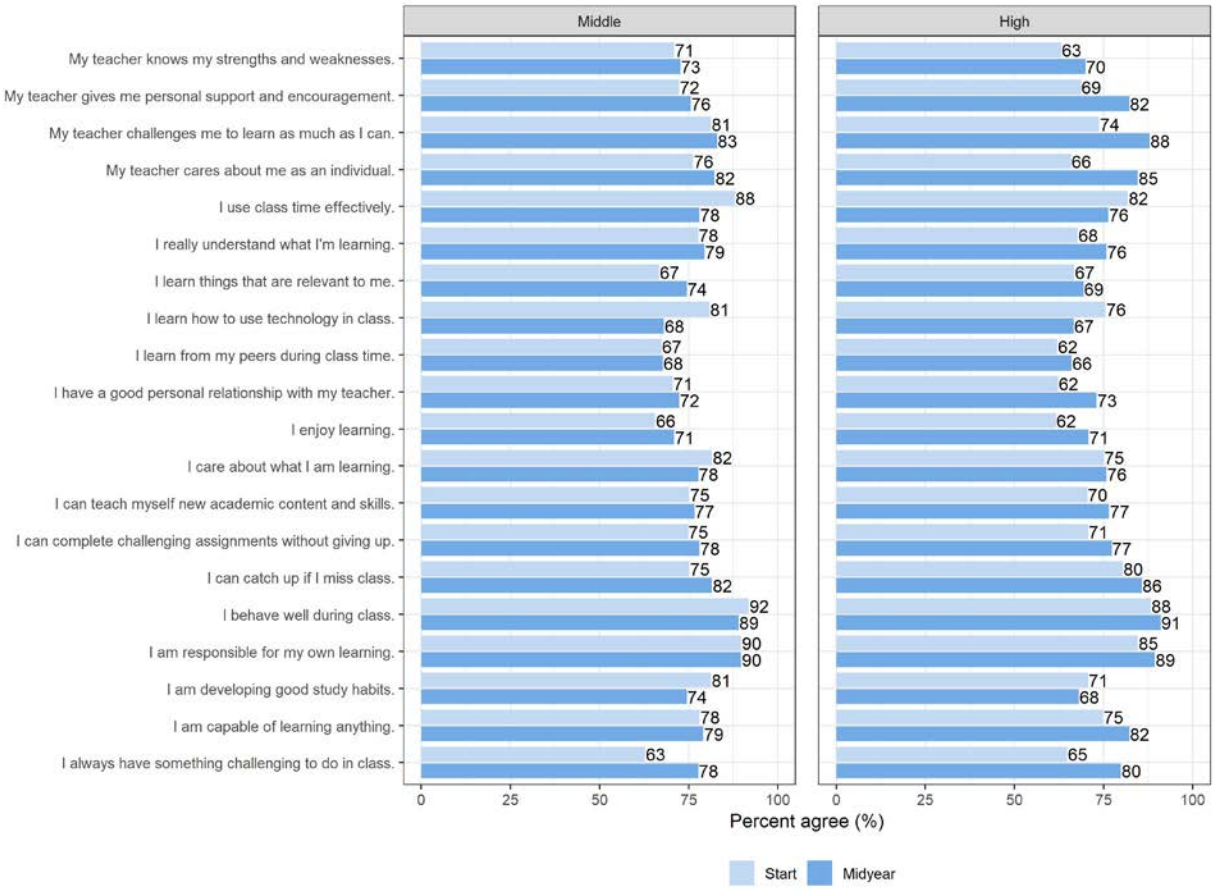
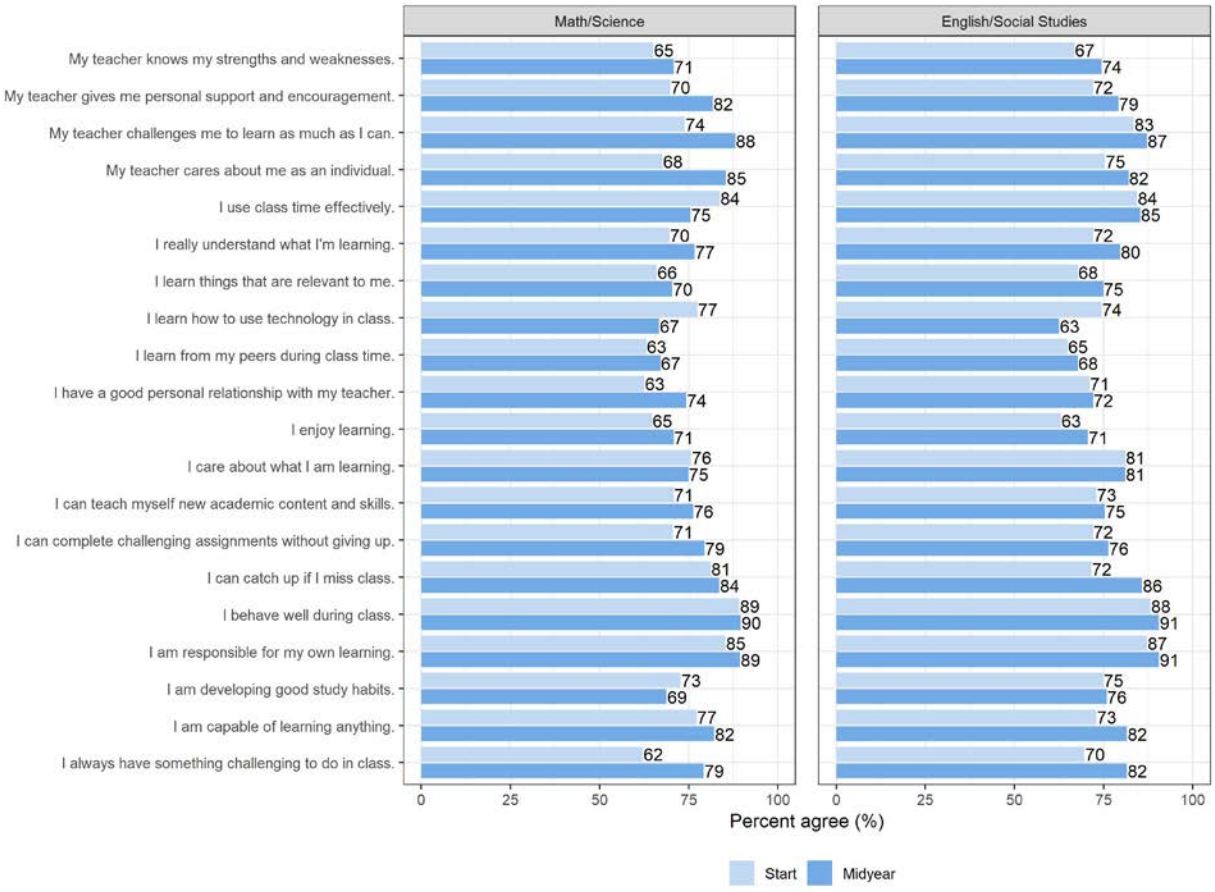


Figure 21. Results over time for students of Fellows by course subject



Appendix B: Survey Instruments

This appendix contains the survey instruments used in the study:

- Modern Classrooms Fellow survey
- Comparison teacher survey
- Modern Classrooms student survey
- Comparison student survey

Note that the pre- and post-surveys as well as the Modern Classrooms and comparison surveys were nearly identical. The only difference was that some questions (such as open-ended items about implementing Modern Classrooms) were included only in the Modern Classrooms post-surveys.

The Modern Classrooms Project -- Teacher Survey

* Required

JOHNS HOPKINS UNIVERSITY: Homewood Institutional Review Board Electronic Assent Procedure

Purpose: We are from Johns Hopkins University Center for Research and Reform in Education (CRRE) and we are asking for your help evaluating The Modern Classrooms Project currently being implemented in your school. We need your help to understand how well the program is working and how we might improve it.

Procedure: We will ask several questions about your experiences with The Modern Classrooms Project at your school. The survey will take about 15 minutes.

Voluntary Participation: You do not have to participate in this study if you don't want to. If you need to stop at any time, that's okay. If you decide not to participate, there are no penalties.

Confidentiality: Any part of the study records that identify you will be kept confidential. The only people who will see or listen to your responses are members of the research team. No one at your school will know how you responded or what you said here today.

Risks and Benefits: There are no known risks to participating in this study. There is no monetary or gift compensation for participating. Your help today will help your school improve the program for you and for other students.

Questions: If you have any questions about this study, please contact Dr. Rebecca Wolf, Principal Investigator (betsywolf@jhu.edu). If you have any questions about your rights as a research participant or concerns about the conduct of this study, please contact the Johns Hopkins University Homewood Institutional Review Board at (410) 516-6580.

1. **Do you agree to participate in this survey?** *

   Mark only one oval.

   - ◯ Yes
   - ◯ No *Stop filling out this form.*

Untitled Section

2. **What is your first name?** *

3. **What is your last name?** *

4. **Please enter your school e-mail address below.** *

Please answer the questions below as they relate to the classes you currently teach.

Classroom Practices

5. **In my current classes,** *
Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I use technology effectively.					
I use my time effectively.					
I can effectively manage student behavior.					
I plan effective learning experiences for my students.					
I provide students with adequate time to revise their work.					
I find class time to be stressful.					

Differentiation

6. **In my current classes,** *
Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I understand what each of my students has and has not mastered.					
I feel I am able to effectively serve students at all levels of understanding.					
I am able to work closely with each of my students during class.					
I use data to provide effective targeted supports to students.					
I can easily help students who have missed class to catch up.					

Student Skill Development

7. **In my current classes,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I teach my students academic skills in addition to content.					
I help my students reflect on their strengths and weaknesses as learners.					
I have good personal relationships with my students.					
I help my students develop better relationships with their classmates.					

Beliefs about Teaching

8. **In my current classes,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I know I am preparing my students for the next grade level.					
I know I am preparing my students for the real world.					
I feel that I am growing and improving as a professional.					
I enjoy teaching.					
I intend to continue teaching for many more years.					
I know I am doing the best I can.					

9. **In what ways has Modern Classrooms training changed the instruction you provide in class?**

10. **In what ways has Modern Classrooms training affected your relationships with your students?**

11. **In what ways has Modern Classrooms training affected your attitudes towards teaching as a career?**

12. **If you have any other comments, please leave them here.**

13. **May we share your written responses to the questions above for promotional and research purposes?** *
Mark only one oval.

- ◯ Yes, and you can include my teaching position (i.e. 7th grade math teacher) and full name.
- ◯ Yes, and you can include my position, but not my name.
- ◯ Yes, but not my position or name.
- ◯ Please do not share my written responses.
- ◯ Other: _____

Thank you for your time -- we appreciate you!

The Modern Classrooms Project -- Teacher Survey

* Required

JOHNS HOPKINS UNIVERSITY: Homewood Institutional Review Board Electronic Assent Procedure

Purpose: We are from Johns Hopkins University Center for Research and Reform in Education (CRRE) and we are asking for your help evaluating The Modern Classrooms Project currently being implemented in your school. We need your help to understand how well the program is working and how we might improve it.

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1. **Do you agree to participate in this survey?** *

   Mark only one oval.

   - ◯ Yes
   - ◯ No *Stop filling out this form.*

The Modern Classrooms Project -- Teacher Survey

2. **What is your first name?** *

3. **What is your last name?** *

4. **Please enter your school e-mail address below.** *

Please answer the questions below as they relate to the classes you currently teach.

Classroom Practices

5. **In my current classes,** *
Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I use technology effectively.					
I use my time effectively.					
I can effectively manage student behavior.					
I plan effective learning experiences for my students.					
I provide students with adequate time to revise their work.					
I find class time to be stressful.					

Differentiation

6. **In my current classes,** *
Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I understand what each of my students has and has not mastered.					
I feel I am able to effectively serve students at all levels of understanding.					
I am able to work closely with each of my students during class.					
I use data to provide effective targeted supports to students.					
I can easily help students who have missed class to catch up.					

Student Skill Development

7. **In my current classes,** *
Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I teach my students academic skills in addition to content.					
I help my students reflect on their strengths and weaknesses as learners.					
I have good personal relationships with my students.					
I help my students develop better relationships with their classmates.					

Beliefs about Teaching

8. **In my current classes,** *
Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I know I am preparing my students for the next grade level.					
I know I am preparing my students for the real world.					
I feel that I am growing and improving as a professional.					
I enjoy teaching.					
I intend to continue teaching for many more years.					
I know I am doing the best I can.					

9. **To what extent, if any, do you use Modern Classroom practices (blended instruction, self-paced structures, mastery-based grading) in your current classes? Please explain.** *

10. **If you have any other comments, please leave them here.**

Thank you for your time!

If you are eligible, we will follow up with you directly in order to pay you for your participation.

The Modern Classrooms Project -- Ms. Blackwood's Student Survey

* Required

JOHNS HOPKINS UNIVERSITY: Homewood Institutional Review Board Electronic Assent Procedure

Purpose: We are from Johns Hopkins University Center for Research and Reform in Education (CRRE) and we are asking for your help evaluating The Modern Classrooms Project currently being implemented in your school. We need your help to understand how well the program is working and how we might improve it.

Procedure: We will ask several questions about your experiences with The Modern Classrooms Project at your school. The survey will take about 15 minutes.

Voluntary Participation: You do not have to participate in this study if you don't want to. If you need to stop at any time, that's okay. If you decide not to participate, there are no penalties.

Confidentiality: Any part of the study records that identify you will be kept confidential. The only people who will see or listen to your responses are members of the research team. No one at your school will know how you responded or what you said here today.

Risks and Benefits: There are no known risks to participating in this study. There is no monetary or gift compensation for participating. Your help today will help your school improve the program for you and for other students.

Questions: If you have any questions about this study, please contact Dr. Rebecca Wolf, Principal Investigator (betsywolf@jhu.edu). If you have any questions about your rights as a research participant or concerns about the conduct of this study, please contact the Johns Hopkins University Homewood Institutional Review Board at (410) 516-6580.

1. **Do you agree to participate in this survey?** *

   Mark only one oval.

   - ◯ Yes
   - ◯ No *Stop filling out this form.*

About You

2. **What is your first name?** *

3. **What is your last name?** *

4. **What is your student ID number? Leave this blank if you don't have one.**

5. **What grade are you in?** *
Mark only one oval.

- 9th
- 10th
- 11th
- 12th

6. **Which class are you taking this survey for?** *
Mark only one oval.

- Math
- Other: _____

7. **Whose class are you taking this survey for?** *
Mark only one oval.

- Ms. Blackwood
- Other: _____

8. **Which class are you in?** *
Mark only one oval.

- 4th Period (Math Studies)
- 5th Period (Calculus)
- 6th Period (Math Studies)
- 7th Period (Math Studies)
- 8th Period (Calculus)
- Other: _____

Questions about Class

Please answer the questions below honestly, about the class you're currently taking. Your teacher will use your responses to make this class a better experience for you!

Engagement

9. **In this class,** *
Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I use class time effectively.					
I behave well during class.					
I always have something challenging to do in class.					
I am learning things that are relevant to me.					
I care about what I am learning					

Skill Development

10. **In this class,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am learning how to use technology.					
I am developing good study habits.					
I can teach myself new academic content and skills.					
I can catch up if I miss class.					
I can complete challenging assignments without giving up.					
I learn from my peers during class time.					

Opinions & Beliefs

11. **In this class,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am responsible for my own learning.					
I really understand what I'm learning.					
I enjoy learning.					
I am capable of learning anything.					

My Teacher

12. **In this class,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My teacher knows my strengths and weaknesses.					
My teacher cares about me as an individual.					
My teacher gives me personal support and encouragement.					
My teacher challenges me to learn as much as I can.					
I have a good personal relationship with my teacher.					

Final Thoughts

13. **Overall,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like the way my teacher teaches this class.					
I would like to take more classes like this one.					

14. **What do you like most about this class?**

15. **What would you change about this class?**

16. **If you have any other comments, please leave them here.**

Thank you for your time!

The Modern Classrooms Project -- Student Survey

* Required

JOHNS HOPKINS UNIVERSITY: Homewood Institutional Review Board Electronic Assent Procedure

Purpose: We are from Johns Hopkins University Center for Research and Reform in Education (CRRE) and we are asking for your help evaluating The Modern Classrooms Project currently being implemented in your school. We need your help to understand how well the program is working and how we might improve it.

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1. **Do you agree to participate in this survey?** *

   Mark only one oval.

   - ◯ Yes
   - ◯ No *Stop filling out this form.*

About You

2. **What is your first name?** *

3. **What is your last name?** *

4. **What is your student ID number? Leave this blank if you don't have one.**

5. **What grade are you in?** *
Mark only one oval.

- 6th
- 7th
- 8th
- 9th
- 10th
- 11th
- 12th

6. **Which class are you taking this survey for?** *
Mark only one oval.

- ELA
- Math
- Science
- Social Studies
- Foreign Language
- Other: _____

7. **What is your teacher's name?** *

_____

8. **What's the name of the course you're taking? Leave this blank if you're not sure.**

_____

Questions about Class

Please answer the questions below honestly, about the class you're currently taking. Your teacher will use your responses to make this class a better experience for you!

Engagement

9. **In this class,** *
Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I use class time effectively.					
I behave well during class.					
I always have something challenging to do in class.					
I am learning things that are relevant to me.					
I care about what I am learning					

Skill Development

10. **In this class,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am learning how to use technology.					
I am developing good study habits.					
I can teach myself new academic content and skills.					
I can catch up if I miss class.					
I can complete challenging assignments without giving up.					
I learn from my peers during class time.					

Opinions & Beliefs

11. **In this class,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am responsible for my own learning.					
I really understand what I'm learning.					
I enjoy learning.					
I am capable of learning anything.					

My Teacher

12. **In this class,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My teacher knows my strengths and weaknesses.					
My teacher cares about me as an individual.					
My teacher gives me personal support and encouragement.					
My teacher challenges me to learn as much as I can.					
I have a good personal relationship with my teacher.					

Final Thoughts

13. **Overall,** *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like the way my teacher teaches this class.					
I would like to take more classes like this one.					

14. **What do you like most about this class?**

15. **What would you change about this class?**

16. **If you have any other comments, please leave them here.**

Thank you for your time!