

Exponential Learning
Initiative: *Building a Stronger*
Understanding of Innovative
Models

Early Learnings



About the Study

Purpose

To build rigorous evidence showcasing how high-quality virtual and hybrid models accelerate learning for students, we are conducting a mixed-methods research study of six, high-quality, public virtual and hybrid models from across the United States. By better understanding the “how” and “why” behind their approaches and aims, we aim to capture insights that can guide future access to and improvement of learning opportunities.

Sample

Surveys were disseminated during the first semester of the 2024-25 school year.

- **631 total students** completed the survey.
- **53 total teachers** completed the survey.

Surveys, demographic, and achievement data were collected from five of the six sites.

To learn more about the sites, review our [latest report](#).

Methodology

This mixed methods concurrent design intends to collect and analyze both quantitative and qualitative data.

Analysis

Quantitative data were analyzed using descriptive statistics, including analyses of normality. Since data was not normally distributed, nonparametric tests were used to make inferences (see Appendix).

Qualitative data was analyzed using multi-level emergent and deductive coding for themes.



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Executive Summary



Executive Summary: 5 Key Themes

Our analysis of survey and student outcome data from the first semester of the 2024-2025 school year revealed **five key themes**:

1. All the sites show evidence of being high quality.
2. When students engage in creativity, it enhances both learning quality and relationships.
3. Teachers continue to play a critical role in student success.
4. Students thrive when they have agency in how they approach their learning.
5. Active learning and consistent attendance remain key drivers of student success.

Preliminary evidence suggested that each of these sites offers a high quality learning opportunity for students. The survey data confirmed this hypothesis and contributes to the evidence base that high quality learning opportunities do exist in virtual and hybrid settings. In addition, analysis of first semester outcome data from two sites revealed that these models also contribute to learning acceleration.

- [Friendship Collegiate Online](#) outperformed comparable brick-and-mortar high schools in ELA and Math NWEA MAP growth. Further, students across all demographic variables, including students with disabilities, experience similar levels of learning acceleration.
- [DaVinci Connect TK-8](#), similar to Friendship, produced equitable learning acceleration across all subpopulations of learners on NWEA MAP.

Finally, our findings suggest that students and educators overwhelmingly value the deep engagement, opportunities to build strong relationships, and quality instruction enabled by technology.



Executive Summary: Implications for Leaders

Families, students, and educators both want and need high quality virtual and hybrid options for a variety of reasons. The question becomes, **how do we offer these choices and with quality?**

In this study of six virtual and hybrid models, we explore indicators that can support leaders in assessing their quality and identifying who they benefit, recognizing they afford meaningful opportunities to expand access to learning for a variety of students.

System and School Leaders

High quality virtual and hybrid models can offer needed choice and expanded opportunities for learners, as well as address systemic challenges such as teacher shortages. While strong technology implementation matters, evaluate potential models for the quality of instruction and ability to foster strong student-teacher relationships.

Policy Makers

High quality virtual and hybrid learning models serve students with a diverse array of needs, creating opportunities they may not otherwise be able to access. Consider how policies, such as seat time requirements or assessment practices, can enable high quality options to take hold within your context.

Funders

Resources are needed to further generate evidence surrounding the efficacy of high quality virtual and hybrid models. As these models scale to address system challenges such as teacher shortages, course access, or to engage students who have not found success in traditional brick-and-mortar settings, a more robust evidence base is critical to support leaders in understanding what constitutes a high quality choice.



Theme 1:

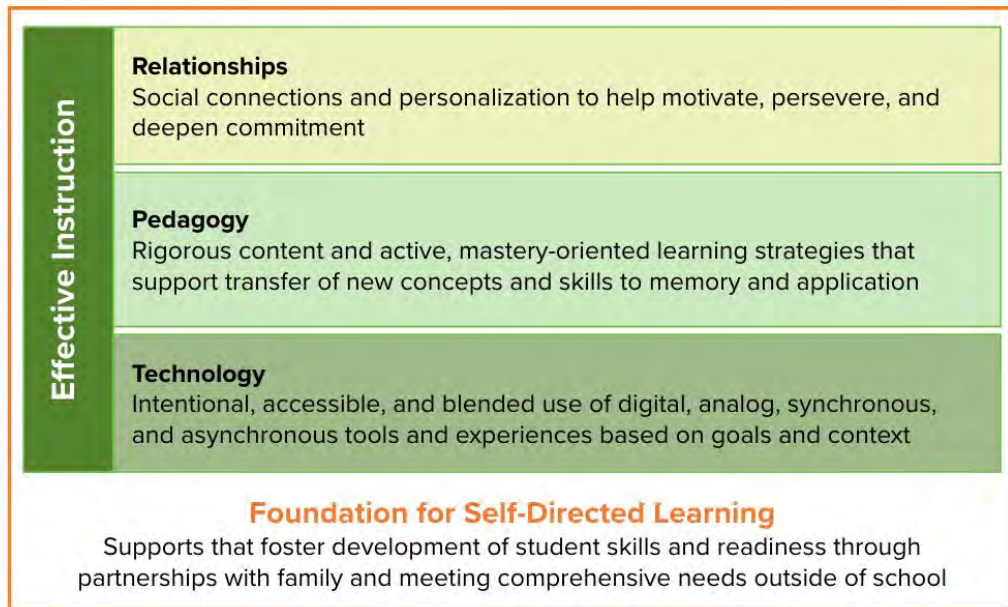
All sites show evidence of
being high quality.



Understanding Quality by using the fall survey to capture student and teacher perceptions.

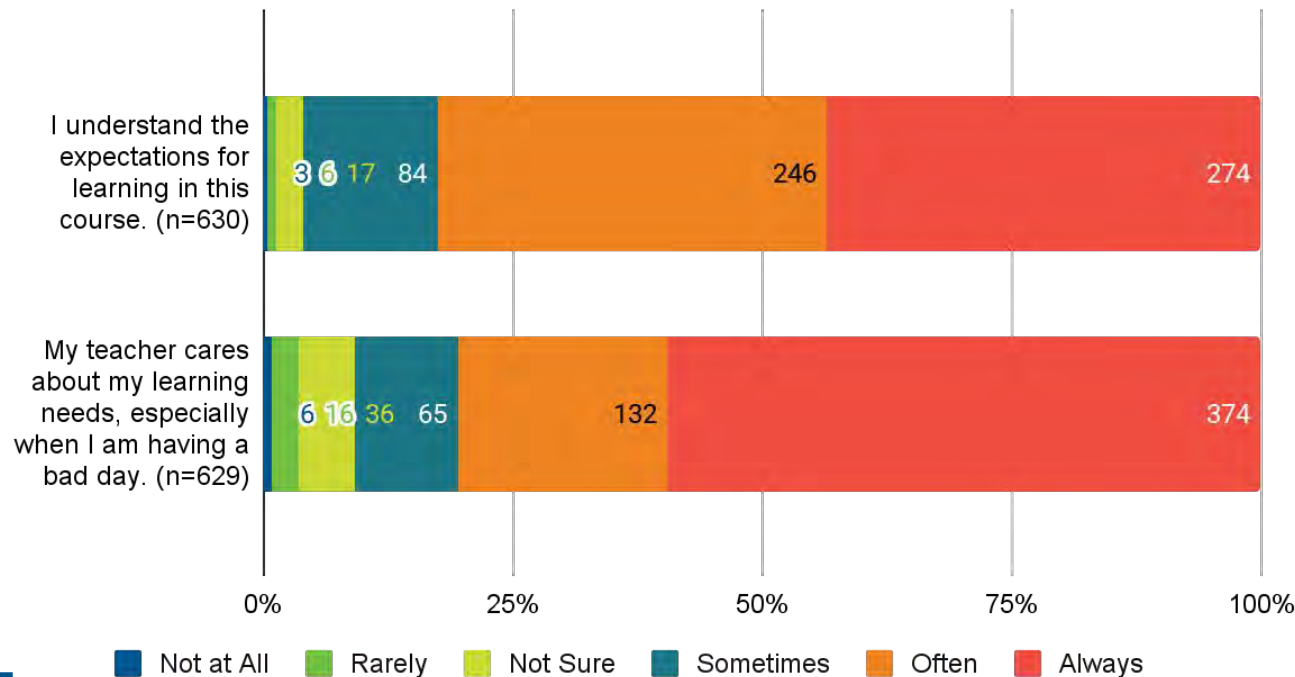
Virtual and hybrid programs have significant potential to increase equity and opportunity for students, but variable outcomes across schools and programs have raised questions about their quality. Although fundamentally different in their design, each of the sites participating in this study possesses common features aligned with what we previously identified as the [*quality drivers of virtual and hybrid instruction*](#): relationships, pedagogy, and technology as the core of effective instruction built on a foundation for self-directed learning.

We are using these *quality drivers* as the underlying framework for our study, and designed our survey to understand the degree to which students and teachers perceive them in context.



Students experienced supports to build their **foundation for self-directed learning**.

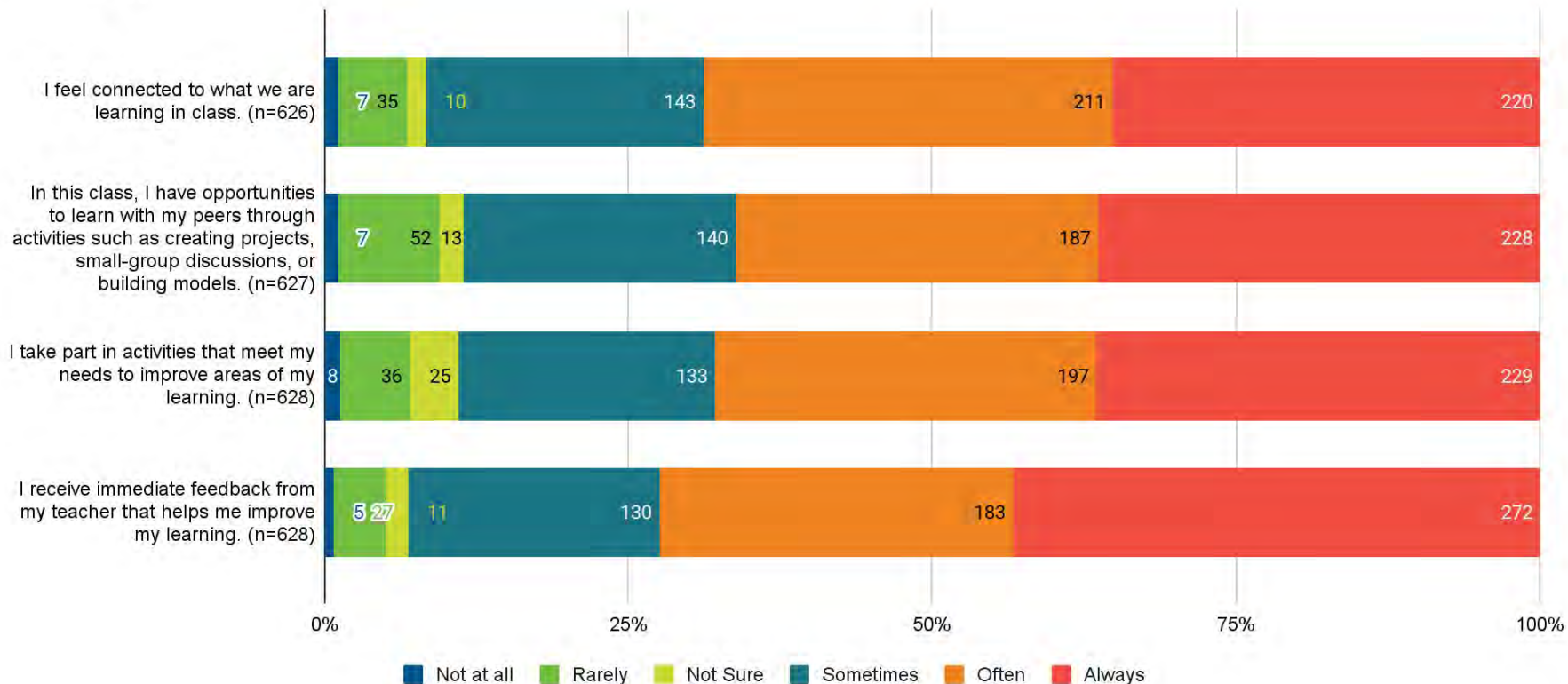
Core to the **foundation for self-directed learning** are students' understanding of expectations and knowing they are well supported.



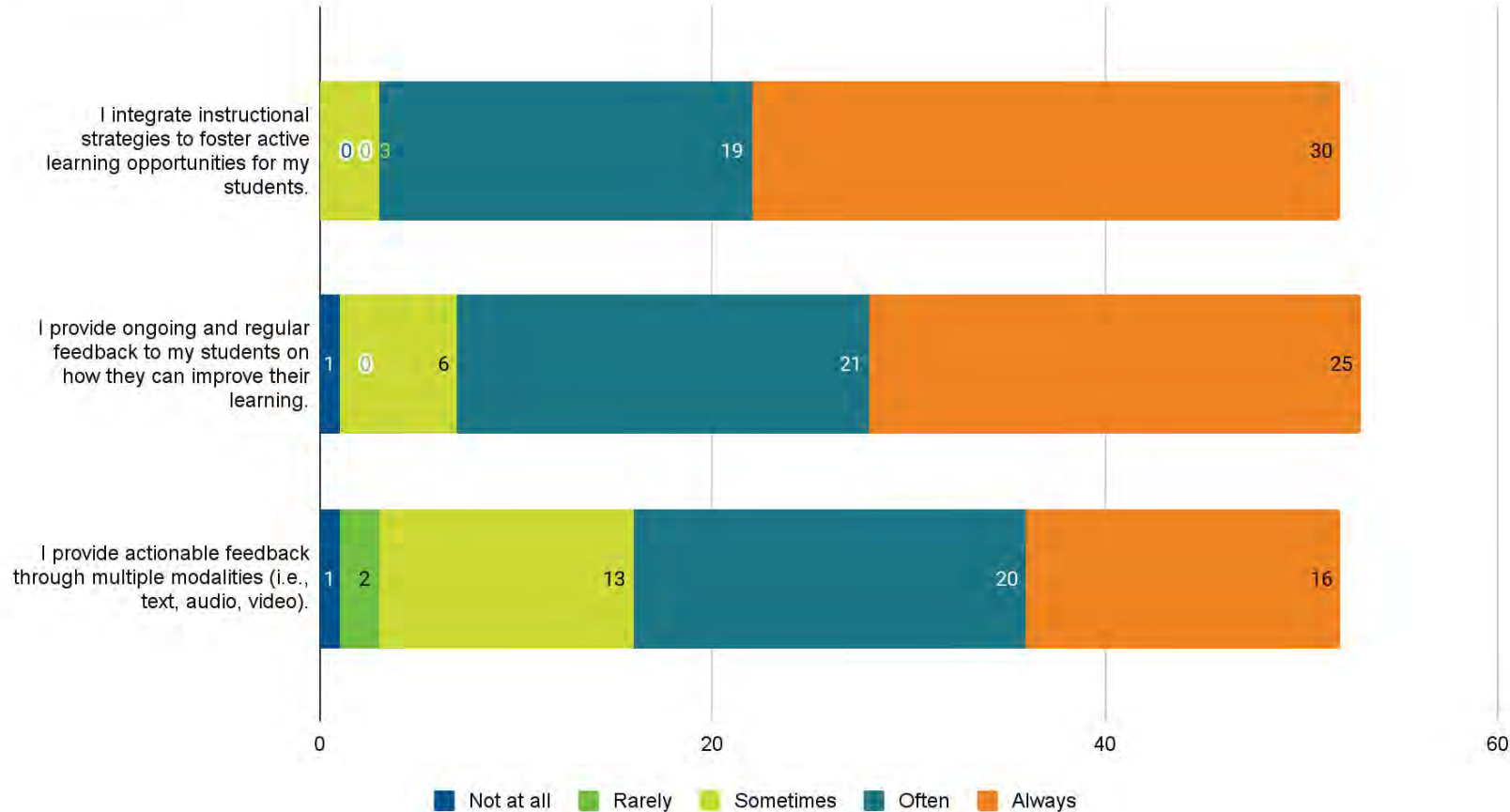
“When I think about virtual learning, I think something that best supports me is having a plan for the day or week and being able to follow along to be successful. It's important to know what you have set out for yourself and how to go about doing so.”



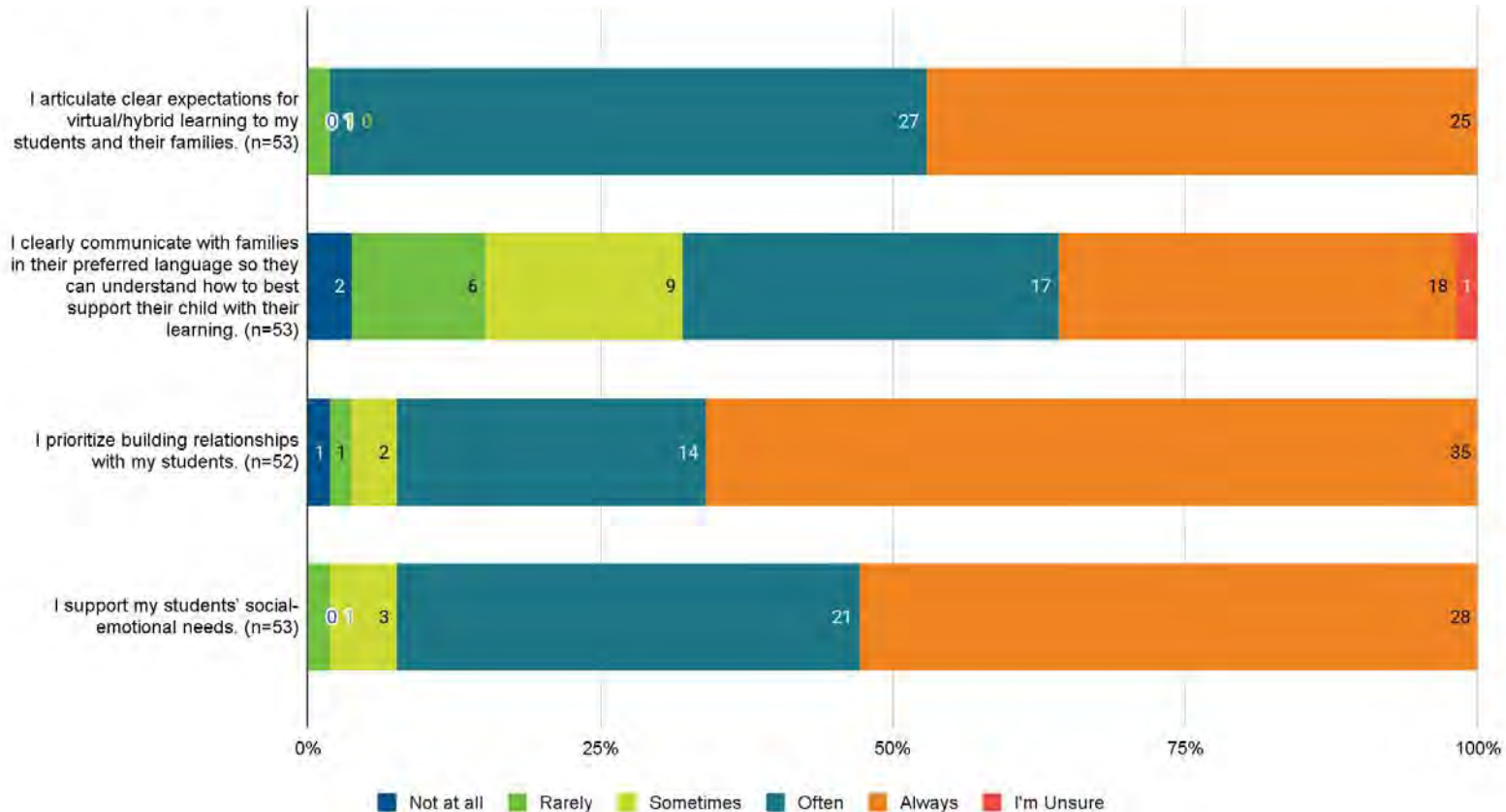
Students reported that they *often* or *always* ($\approx 70\%$) engage in activities indicative of high-quality **pedagogy**.



Educators reported they *often* or *always* ($\geq 68\%$) use effective, high-quality **pedagogy** for virtual and hybrid learning.

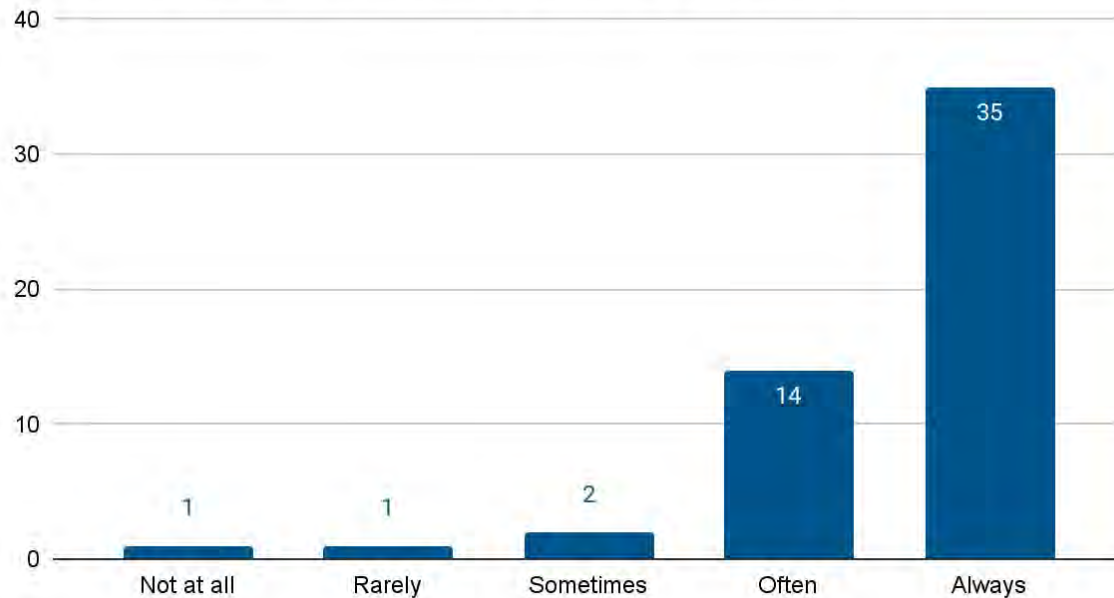


Educators taught students to engage in order to build a strong foundation for self-directed learning.



Teachers prioritized building **relationships** with students, reflecting the importance of human connection in learning and engagement.

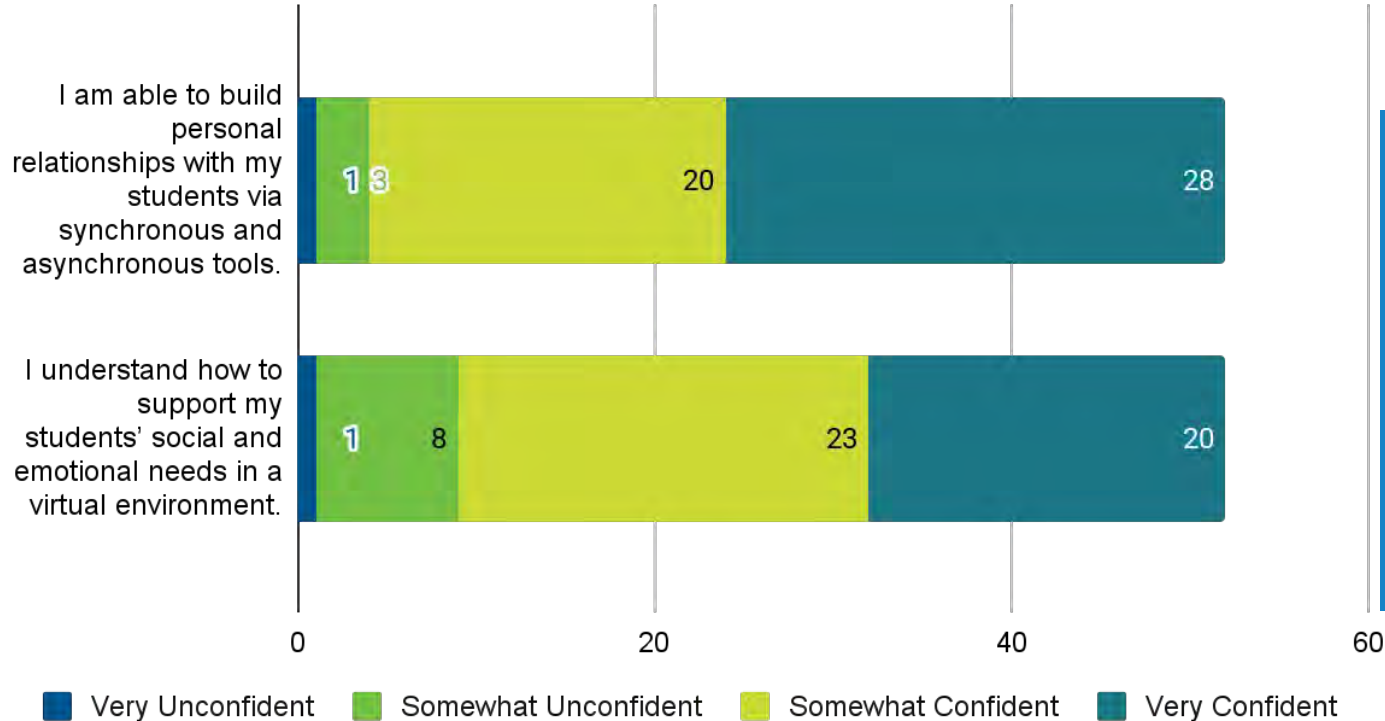
I prioritize building relationships with my students.



“At the core of our success is the team of teachers that are passionate about what we do and care about making learning something young people can enjoy.”



Educators prioritized **relationships** with students through collaborative learning and instructional tools to promote student engagement.



“I utilize collaborative tools in my class that foster engagement and facilitate communication. These resources promote active learning and provide diverse avenues for students to express understanding, thus enhancing their overall academic performance.”



A Spotlight on
Student
Outcomes from
Friendship
Collegiate
Online



Friendship Collegiate Online served a similar population as other brick-and-mortar high schools within its charter network.

[Friendship Collegiate Online](#) serves 9th-12th grade students in a virtual environment using a traditional school model. Friendship Collegiate Online has a similar population as other high schools in the Friendship Public Charter Schools network, including comparable beginning of the year MAP scores, attendance rates, and overall student demographics.

Notably, **Friendship Collegiate Online serves a greater percentage of students with disabilities and students who are designated “Economically Disadvantaged” which is determined by a number of variables related to socioeconomic status including whether a student is receiving federal or local financial assistance, in the foster care system, designated as homeless, or overaged.**

Student Demographics	Friendship Collegiate Online	Comparison 1	Comparison 2
Black or African American	93.1%	100.0%	98.6%
White	3.0%	0.0%	0.3%
Asian	0.4%	0.0%	0.0%
American Indian	3.4%	0.0%	0.8%
Pacific Islander	0.0%	0.0%	0.3%
Economically Disadvantaged	73.7%	68.4%	69.4%
Qualify for Special Education Services	31.5%	Not Reported	18.9%



This high-quality virtual model offered valuable learning opportunities for students to succeed at rates comparable to their peers.

When looking across student NWEA MAP data for the beginning of the year (BOY), Friendship Collegiate Online has statistically similar scores as the comparison high schools, with the exception of Comparison School #1 which has a higher initial math average.

By the middle of the year (MOY), Friendship Collegiate Online has maintained comparable scores to the other high schools and demonstrated slightly higher, on average, normed percentile growth in both Math and ELA. This suggests that Friendship's virtual option maintains high-quality learning experiences for students.

Further, students with disabilities experience learning acceleration at a rate similar to their peers in Math and ELA as measured by normed NWEA MAP percentile growth.

Student Outcomes for School Year 24-25	Friendship Collegiate Online	Comparison 1	Comparison 2
First Semester Attendance Rate	86.8%	Not Reported	90.6%
Cumulative GPA	2.18	Not Reported	1.33
First Semester GPA	2.23	Not Reported	1.31
ELA BOY MAP Average Percentile	45.9	42.8	42.6
Math BOY MAP Average Percentile	34.2	42	36.9
ELA MOY MAP Average Percentile	46.3	41.1	41.1
Math MOY MAP Average	37.9	38.4	36.7
ELA MAP Fall to Winter Growth Percentile	48.4	44.6	46
Math MAP Fall to Winter Growth Percentile	49.4	40.6	48.5



Theme 2:

When students engage in creativity, it enhances both learning quality and relationships.



Using the fall survey to understand the role of creativity in high quality learning.

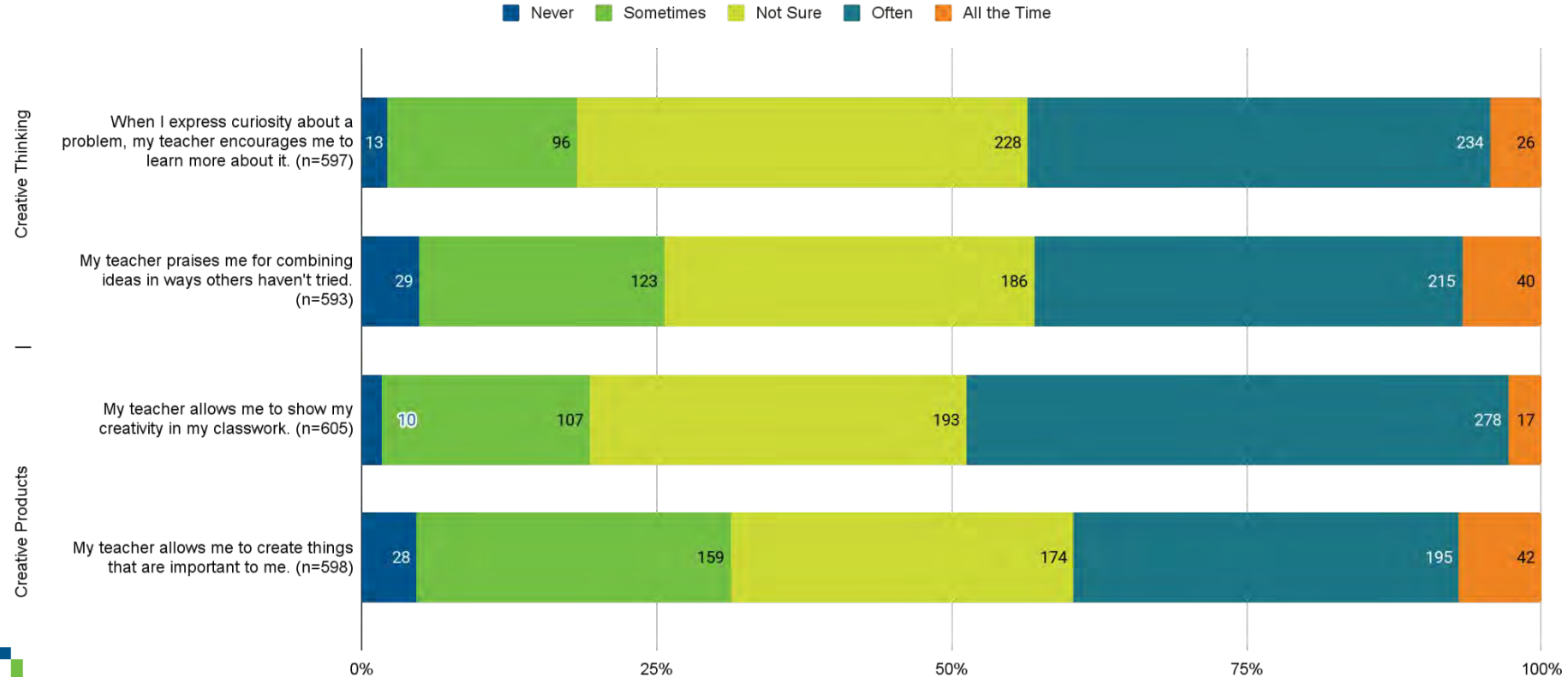
We recognize that [creativity plays an important role](#) in future workforce development and making learning relevant and rigorous. However, many schools and educators are not well-equipped to foster creative learning environments. For this study, we wanted to understand the extent to which creativity was present and the relationship it had with perceptions of high-quality learning.

We explored three domains in our surveys:

1. Creative thinking,
2. Creative problem solving, and
3. Creative products.



~40% of students experienced creative thinking and product creation *often or all the time*.



Students who experienced more creative thinking were more likely to experience high-quality instruction.

Across all of the survey prompts, students who reported experiencing high levels of quality instruction also experienced high levels of creativity, and vice versa.

However, when examined further, the creative thinking prompts had the strongest connection ($p < .001$; $\epsilon^2 = 0.206 - 0.281$) to whether students experienced each of the quality drivers:

- *When I express curiosity about a problem, my teacher encourages me to learn more about it.*
- *My teacher praises me for combining ideas in ways others haven't tried.*

This may suggest that teachers play a key role in supporting learners in not only exploring creative thinking, but in facilitating an overall high-quality learning environment.

Of the drivers of high-quality instruction, student-teacher relationships were most impacted by how students reported creative thinking, problem solving, and product development.

This suggests that students having opportunities to think outside the box, solve complex problems, and choose how they create original products plays a significant role in the relationship they develop with their teachers.

Across relationship variables, large, significant ($p < .001$) effect sizes ($\epsilon^2 = 0.19 - 0.281$) were observed when mediated by creativity variables.

“[Virtual learning] supports my creativity and ideas and prepares me for the real world.”

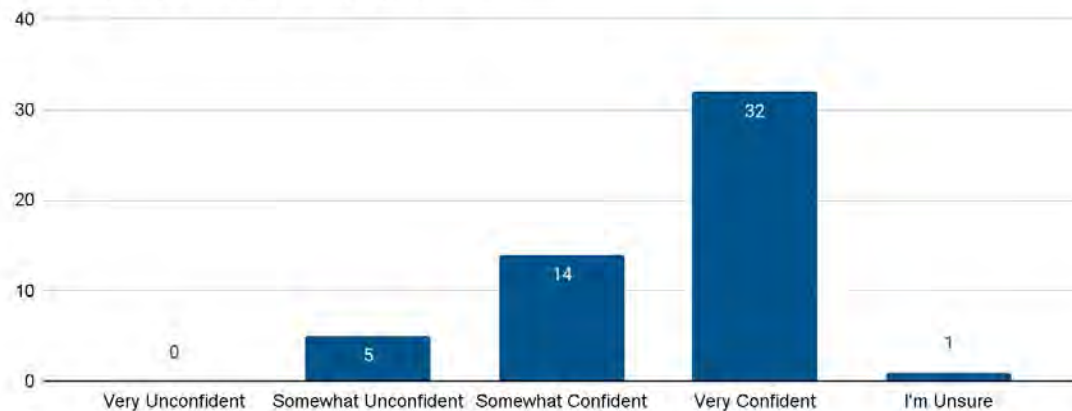


Educators reported having the training they need to provide high-quality, creative learning environments.

Teachers largely reported that they are **somewhat or very confident** that they have adequate training on how to use all the features of technology tools, course materials, and supports to facilitate student learning.

Teachers also emphasized that student access to technological infrastructure and at-home support, such as stable internet connection, reduced distractions, and familial encouragement, were critical to student success.

I know how to leverage both asynchronous and synchronous learning experiences to meet the varied needs of my students.



Teachers' are confident in leveraging both asynchronous and synchronous learning experiences to customize learning for students.



Theme 3:

Teachers continue to play a critical role in student success.

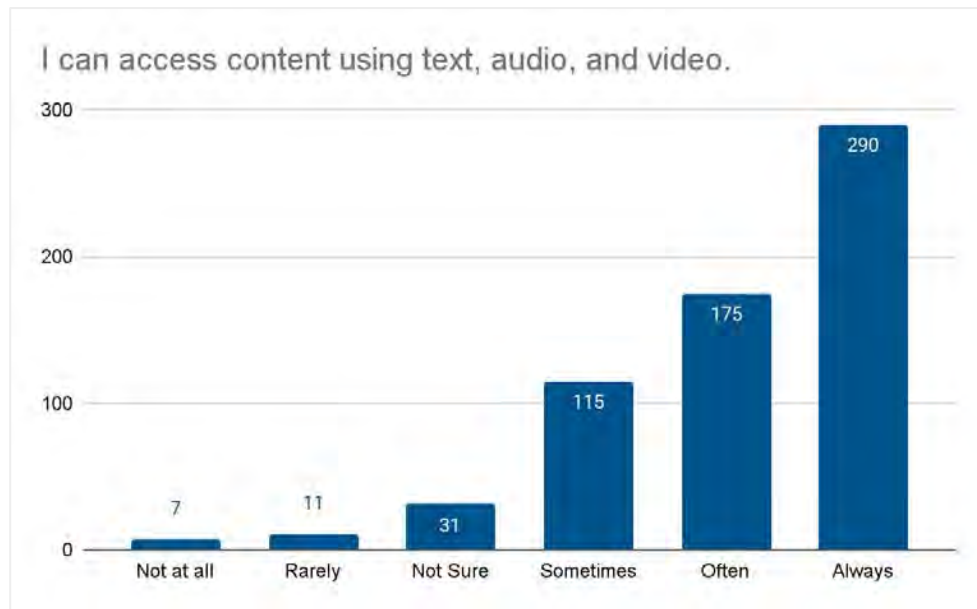


Students and leaders valued educators, instructional models, and relationships more than the technology.

Since virtual and hybrid models are enabled by technology, the tendency exists to over-emphasize it. Although present, the technology was not the focus of what makes these models successful.

In our initial conversations with each of the six sites to deeply understand their models, technology was never the focus of their discussions. Overwhelmingly, it was de-emphasized, with leaders describing instruction, school culture, whole child supports, and relationships as core to their models.

Similarly, students rarely reported technology as a major factor in their success. **What stood out to these students was personalized learning opportunities and having strong relationships with their teachers.**



Students indicated that they could access a variety of modalities, yet they did not indicate that technology played a critical role in their learning.



Students felt that their teachers and personalized instructional models were more supportive to their learning than technology.

When asked, *When you think about your virtual or hybrid learning, what do you think best supports you as a learner?* Only 2% of the students explicitly described the “technology” (e.g., “computer” or “Chromebook”).

- **37% described their teacher** - *“When the teacher is always available to help you out.”*
- **29% mentioned flexibility** - *“I think the virtual program best supports me as a learner because it helps me work at my own pace.”*
- **5% discussed ways that school felt more relevant** - *“... this opportunity is extremely important to me, and many other hybrid/virtual learners, as it provides us with the resources to learn based off of our personal interests, beyond what our local high school may offer. Expanding off of one's interests to me, equates to a higher commitment level. I feel like with classes one finds interesting, they are more likely to enjoy/spend the time doing the work...”*



A relationship emerged between how teachers foster creativity and how students experience high quality learning.



As described previously, creativity plays a role in how students experience high quality learning. When examining the variables that have the strongest relationship to high quality learning, the two creative thinking prompts that center educators stood out:

- When I express curiosity about a problem, my teacher encourages me to learn more about it.
- My teacher praises me for combining ideas in ways others haven't tried.

This suggests that the relationships teachers foster with students through active encouragement and praise for creative thought are critical to students' overall experience with learning. These human and social elements of learning should not be overlooked as students are overwhelmingly telling us this matters to them and their success.



Theme 4:

Students thrive when they have agency in how they approach their learning.



Students valued agency in their learning.

Throughout the survey, students emphasized that having agency in their learning was at the heart of their success.

Students enjoy being able to choose the pace or order of what they learn, making decisions about where they learn, and collaborating with their educators to identify the right tools, content, and projects to help them demonstrate learning. By having agency, students are able to explore areas of interest and build their ability to self-direct their learning.

Students recognize the role their learning environment plays in their success. Overall, they expressed the need to have customized, low-distraction learning spaces that allow them to listen to music, fidget, or sit in different configurations.

“I think the part about [my hybrid program] that best supports me as a learner, is how flexible the learning is. As someone on the spectrum, typical learning environments and their structure has been hard for me, [my hybrid program] helps me to learn the way that works best for me. By allowing me to express my creative interests through community projects, while also completing the standards necessary to pass my classes.”

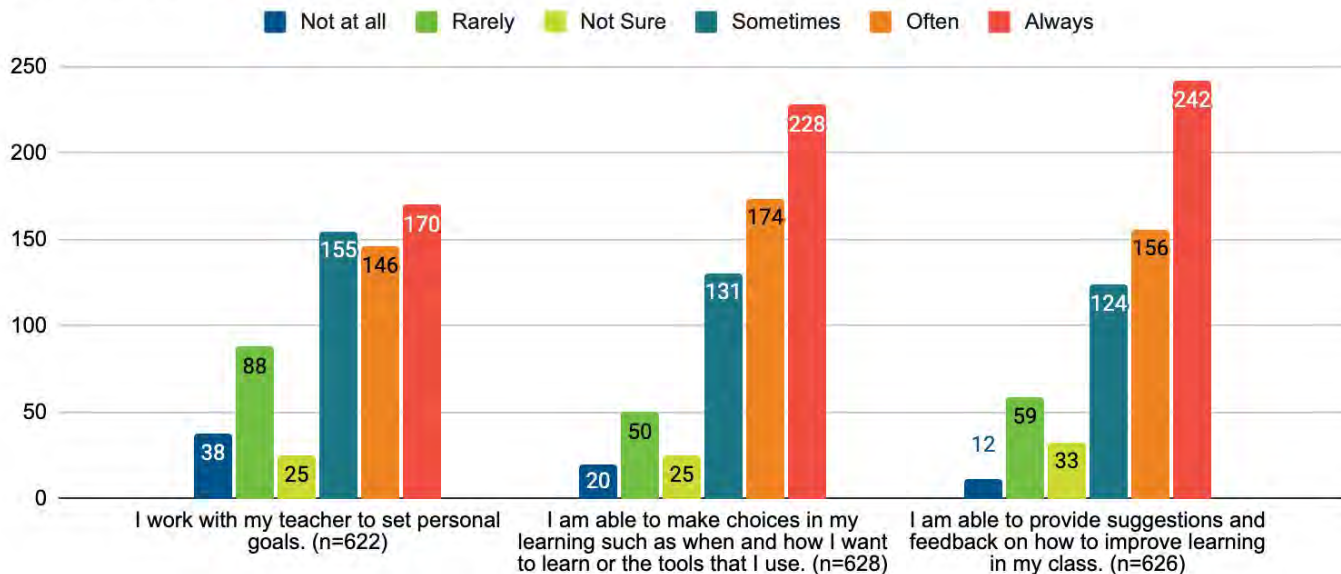
“I like how I have the ability to learn at my own pace and be able to be in control of what I learn and still have the ability to get help with the things I don't yet understand.”



Student responses indicated that they felt a sense of agency in their classes.

Students largely reported that they *often* work with their teacher to set personal goals and make choices in their learning.

Over 94% reported that that they are at least *sometimes* able to provide suggestions and feedback on how to improve learning in their class.



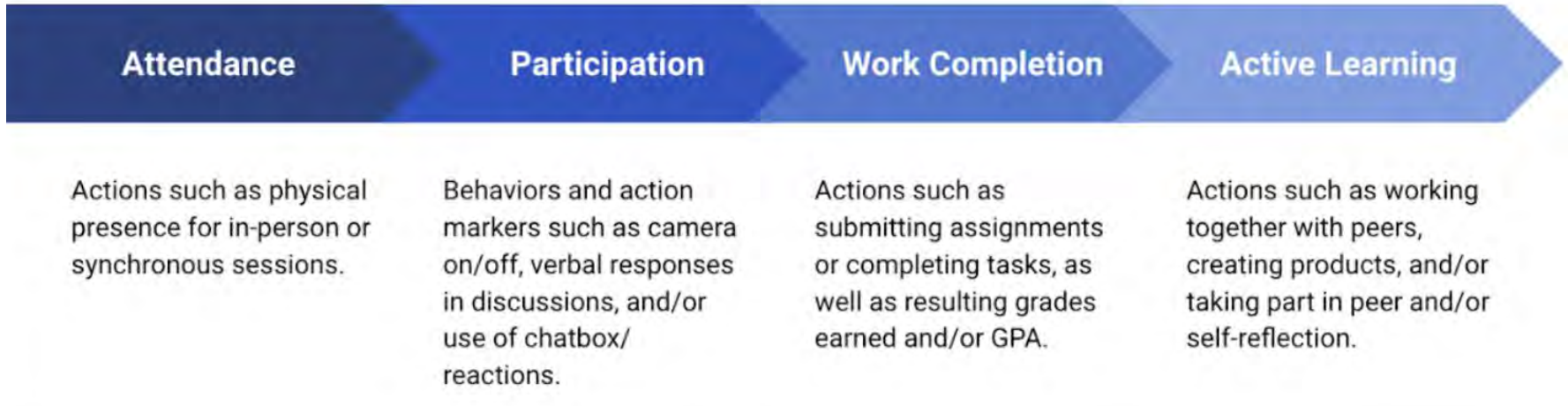
Theme 5:

Active learning and
consistent attendance
remain key drivers of
student success.



There is a continuum of student engagement in virtual and hybrid learning.

For students to thrive in a virtual/hybrid learning environment, it is essential to foster [student engagement](#). However, definitions of “engagement” vary from more superficial measures (attendance, participation, and work completion) to demonstrations of more active learning – such as how students collaborate, construct meaning, and demonstrate understanding with peers and adults. TLA considers engagement along a continuum from foundational tenets (i.e., attendance) to more meaningful forms (i.e., active learning).



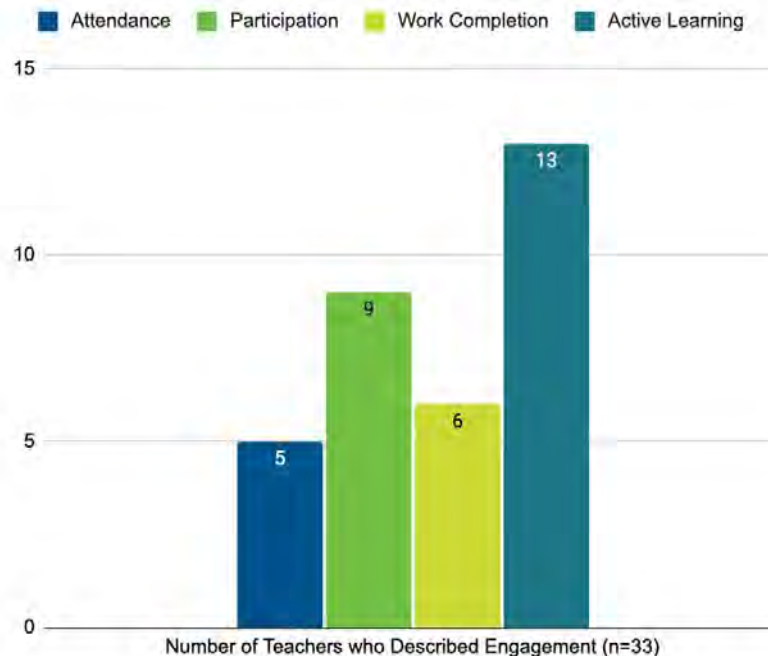
Teachers had divergent beliefs as to what level of engagement contributes to student success.

Of the 33 teachers who discussed student engagement, 42% described simply attending or participating as core to student success.

However, 39% of teachers also recognized the importance of active learning—including collaborating, having agency, and communicating—to holistic student success.

With the full continuum of engagement present in teachers' open responses, it gives clues as to where students may be experiencing and engaging with higher quality learning.

Teacher Perceptions of the Level of Student Engagement Needed for Success



Teachers understood that attendance matters.

In teachers' descriptions of what contributes to student success, *attendance* emerged as an essential component to student learning. In addition to students merely showing up, educators emphasized the importance of students actively participating in their learning to their overall success.

This theme was further triangulated using student survey data. Using Spearman's correlation, we found significant correlations ($p=0.004-0.048$) between students who have been identified as chronically absent in the first semester and those who marked lower values on survey items within each of the quality driver and creativity domains.



Spotlight on
Student
Outcomes from
DaVinci
Connect TK-8



Davinci Connect TK-8 serves a diverse student population in a hybrid homeschool model.

[Davinci Connect TK-8](#) offers a hybrid learning model where students learn at home, with a parent educator, three days a week and come to campus two days a week for project-based learning.

Their student population is racially and socioeconomically diverse. Core to their model is building an inclusive and safe community where all students and families receive tailored support, can pursue their interests, and develop needed durable skills that enhance whole child development.

Since parents serve as core educators for students, DaVinci teachers provide curricular resources, training, and coaching for families to support strong, personalized instruction at home.

Student Demographics	Davinci Connect TK-8
Black or African American	14.6%
White	20.5%
Asian	5.2%
Hispanic or Latine	36.0%
Two or More Races	22.0%
Receive Nutrition Support	36.9%
Qualify for Special Education Services	13.6%
Qualify for English Language Services	2.6%



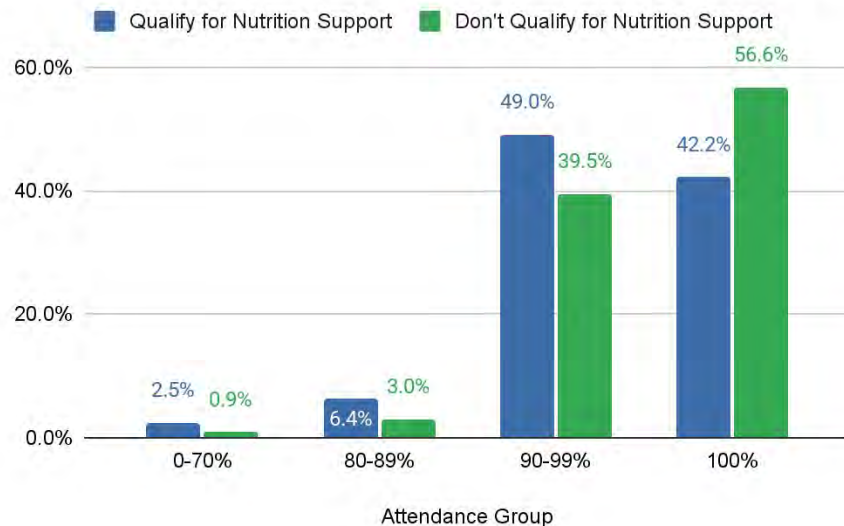
DaVinci Connect TK-8 has high overall attendance.

At DaVinci Connect TK-8, students overall had very high attendance. As a homeschool hybrid model, attendance is monitored through the use of learning logs which are created by families. As a model that is designed around active family involvement, high attendance can also be a marker for familial engagement in documenting learning.

However, within that high attendance, there is variation by whether a student qualifies for nutrition support or not, which is often used a proxy for understanding students' socioeconomic status. Since attendance matters for achievement, this is worth exploring.

Attendance Group	Qualify for Nutrition Support	Don't Qualify for Nutrition Support
0-70% (n=8)	5	3
80-89% (n=23)	13	10
90-99% (n=231)	100	131
100% (n=274)	86	188
Total (n=536)	204	332

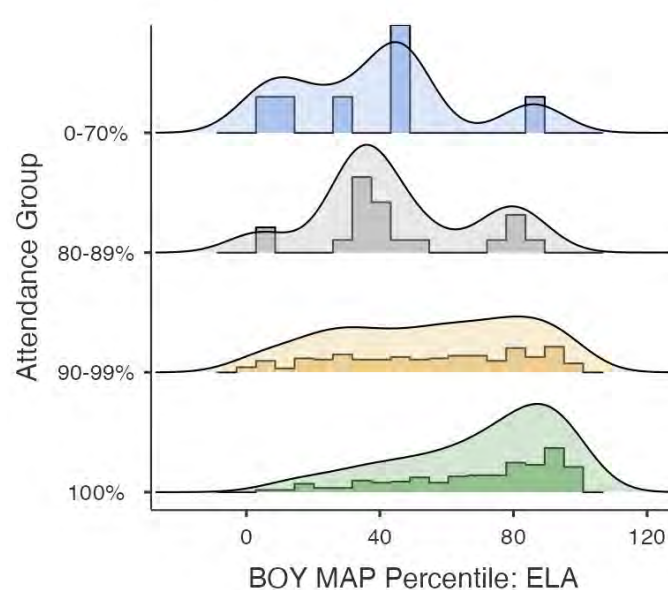
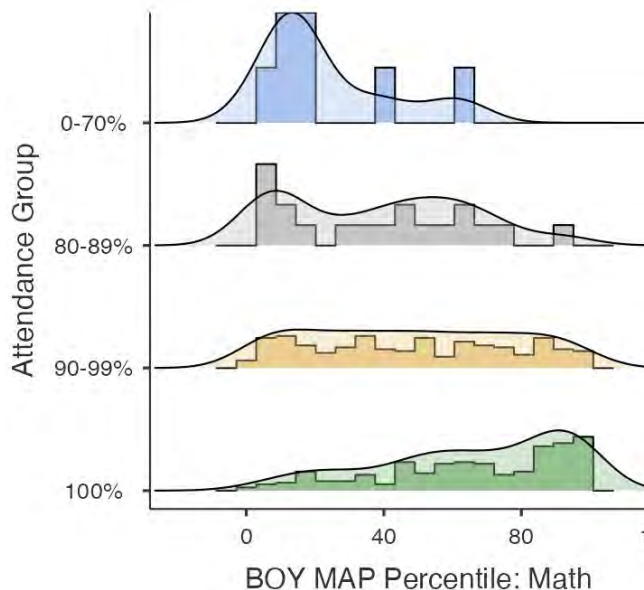
Attendance Rates by Student Nutrition Support Status



Attendance has a strong relationship with student achievement.

In a moment when we're seeing [persistent chronic absenteeism](#) in the field, at DaVinci Connect TK-8, we observed high attendance rates **AND** high math and ELA scores.

Attendance at DaVinci Connect TK-8 had the **strongest relationship with student outcomes** ($p < .001$), based on a Spearman's correlation between demographic variables and student achievement, including NWEA MAP scores and state assessment data in Math and ELA.



Attendance and nutritional support status are correlated to NWEA MAP Achievement.

We observed a significant correlation ($p < .001$) between attendance and NWEA MAP achievement for both ELA and Math. Similarly, students' nutritional support status is also correlated ($p < .001$) with achievement, which makes sense since this status also has a relationship with attendance ($p < .001$).

As the Spearman's correlation matrix to the left demonstrates, as students have higher attendance or do not qualify for nutritional support, they have higher achievement at each time interval and in each subject of the NWEA MAP assessment.

Recognizing the unique needs of these learners, DaVinci Connect TK-8 developed interventions such as having students attend their campus four days a week instead of two to support higher attendance and access to learning.

		Attendance Group	Free and Reduced Lunch Status	BOY MAP Percentile: ELA	BOY MAP Percentile: Math	MOY MAP Percentile: ELA	MOY MAP Percentile: Math
Free and Reduced Lunch Status	Spearman's rho	0.152 ***	—				
	df	534	—				
	p-value	< .001	—				
	N	536	—				
BOY MAP Percentile: ELA	Spearman's rho	0.312 ***	0.249 ***	—			
	df	462	462	—			
	p-value	< .001	< .001	—			
	N	464	464	—			
BOY MAP Percentile: Math	Spearman's rho	0.341 ***	0.306 ***	0.78 ***	—		
	df	473	473	452	—		
	p-value	< .001	< .001	< .001	—		
	N	475	475	454	—		
MOY MAP Percentile: ELA	Spearman's rho	0.219 ***	0.258 ***	0.84 ***	0.735 ***	—	
	df	367	367	348	356	—	
	p-value	< .001	< .001	< .001	< .001	—	
	N	369	369	350	358	—	
MOY MAP Percentile: Math	Spearman's rho	0.308 ***	0.289 ***	0.75 ***	0.9 ***	0.765 ***	—
	df	370	370	351	360	365	—
	p-value	< .001	< .001	< .001	< .001	< .001	—
	N	372	372	353	362	367	—



All Students Demonstrated Growth at DaVinci Connect TK-8.

However, while student attendance was strongly correlated with BOY and MOY NWEA MAP scores ($p < .001$), it was not correlated with student growth percentiles on these assessments. Similarly, only a small correlation ($p = .046$) was observed between students' nutritional support status and ELA growth.

These findings suggest that regardless of a student's attendance or socioeconomic status, learners have access to high quality learning that ensures they are going to experience learning acceleration at a rate similar to their peers.

		Attendance Group		Free and Reduced Lunch Status		ELA Fall to Winter Growth Percentile		Math Fall to Winter Growth Percentile	
Attendance Group	Spearman's rho	—							
	df	—							
	p-value	—							
	N	—							
Free and Reduced Lunch Status	Spearman's rho	0.152	***	—					
	df	534		—					
	p-value	< .001		—					
	N	536		—					
ELA Fall to Winter Growth Percentile	Spearman's rho	0.06		0.09 *		—			
	df	486		486		—			
	p-value	0.188		0.046		—			
	N	488		488		—			
Math Fall to Winter Growth Percentile	Spearman's rho	0.066		0.062		0.432 ***	—		
	df	483		483		470	—		
	p-value	0.149		0.174		< .001	—		
	N	485		485		472	—		



Conclusion and Next Steps



High Quality Models Lead to Strong Outcomes for Students

Our analysis of the fall survey and first semester data confirms that we have identified high quality models to participate in this study. Each of these high quality models offer important opportunities to engage in learning connected to the four quality drivers: foundations of self-directed learning, relationships, pedagogy, and technology, as well as to experience creativity in their learning.

Initial analysis of two sites revealed that students experiencing high quality models are achieving strong academic outcomes, including achievement and broader measures such as attendance. In the coming months, we will be expanding our analysis to better understand learning acceleration using both traditional academic outcome data and broader measures from each of the other sites.

This initial analysis of the [Exponential Learning Initiative Evidence Sites](#) **confirms our theories about the four quality driver's role in high quality learning and presents early evidence of learning acceleration in both virtual and hybrid settings.**



Next Steps

These findings are a part of our larger [Exponential Learning Initiative](#) Building Stronger Understanding of Innovative Models Study. Since analysis of the first semester:

- We administered a spring survey to students and teachers to understand how they are experiencing high quality learning, creativity, and elements of their instructional models.
- We will complete a full mixed-methods analysis of data collected through the duration of the 2024-2025 school year of the five of the six evidence sites, including outcome data and broader measures that will support our understanding *how these models work, for whom, and under what conditions*.
- We will release a full report of our findings in the Fall of 2025.



Appendix



Analysis

Quantitative Analysis

The first layer of quantitative analysis included the use of descriptive statistics. Frequency analyses and analysis of skewness, kurtosis, distribution, and normality supported an initial understanding of the data set and were used to determine appropriate subsequent tests that would identify relationships between variables.

Since the data was not normally distributed, nonparametric tests were used to make inferences. To identify relationships, Spearman's Correlation was used across variables. For variables with an identified relationship, the Kruskal-Wallis test was used to determine the effect size and the Dwass-Steel-Critchlow-Fligner pairwise comparisons test was used to understand the degree to which there were significant differences between groups.

Qualitative Analysis

Qualitative data was analyzed using multi-level emergent and deductive coding for themes:

- In the first round of coding, open-response survey items were analyzed for the key variables participants identified as contributing to student success and support.
- The second round of coding identified the direction, positive or negative, and/or nuance within the code to support theme generation.
- The third round of coding grouped second-round coding into core themes.
- The fourth round of coding took a deductive approach using the Student Engagement Continuum, after initial coding of teacher responses identified attendance and engagement as core factors that support student success.

