Emergent Themes from a Study of a Highly Flexible Hybrid Learning Program

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Abstract
As educators increase their use of digital technologies across learning modalities, some schools are experimenting with highly flexible models of learning that maximize opportunities to support learner preferences. The perceptions of these programs by teachers, parents, and students are crucial for building and maintaining community support and securing funding for school practices that are innovative and educative. The purpose of this study was to understand the perceptions of teachers, parents, and students working in a school using hybrid learning with individualized schedules. Perceptions of the school emerged as a sense of shared responsibility and united advocacy for students. Advocacy centered on (1) making instruction accessible and (2) providing appropriate instructional support. While there was agreement across participant groups on these themes, teachers described additional workloads. Implications include the need to build a united purpose around students while also supporting teachers.

Keywords: K-12 hybrid learning, flexible school scheduling, self-regulation of learning, hybrid instructional supports, accessible digital learning

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Hybrid learning, which some scholars and practitioners have also called *blended learning*, attempts to combine online and in-person instruction, usually at different points in time (Barbour et al., 2011; Johnson et. al, 2022). Hybrid learning occurs in higher education and K-12 schooling and there are varying models and routines for how to deliver the online, in-person, and the synchronous and asynchronous elements, often with the use of a learning management system (LMS) (The Digital Learning Collaborative, 2019). According to the Christensen Foundation for Disruptive Learning (Arnett, 2021), K-12 teachers increased their use of hybrid learning techniques leading up to the pandemic. In a series of surveys beginning in October 2020, 596 classroom teachers representing 430 school districts from 45 states and the District of Columbia reported increased use of hybrid learning (Arnett, 2021). The foundation also conducted administrator surveys where responses were collected from 694 K–12 administrators representing 596 school districts from 48 states and the District of Columbia. Findings were similar. Administrators reported large increases in uses of both online and in-person instruction. As additional evidence, although not a scientific sample, Williams (2023) documented visits to 100 K-12 classrooms in three states over six months and found teachers and students using digital tools to do work across time and in different places (home and school). Williams wrote:

> [Teachers] have continued to use Google Classroom and other platforms as part of their courses. These streamline student assignments—teacher grading and subsequent data analysis—and offer the potential for more effective and timely communication with students' families. Indeed, teachers reported that, at this stage of the pandemic, many more of their families have and can use online communication tools like email, school communication apps, … and video conferencing to stay linked up to what's happening on campus. (Williams, 2023, n.p)

Previously, scholars like Barbour and Harrison (2016), Kuo et al. (2014), and Gough et al. (2017) have found some evidence of positive perceptions for hybrid initiatives among teachers. Although these findings have been promising, additional inquiries are needed to determine how various groups besides teachers perceive the hybrid learning experience. Moreover, it would be useful to understand perceptions of roles and responsibilities within hybrid learning (Harrell & Wendt, 2019). When learning takes place both online and in-person and both synchronously and asynchronously, there should be a greater need for shared monitoring of learning, support from adults, and dialogue to determine how to help the children and adolescents have good experiences. In the present study, researchers gathered perspectives from parents, youth in grades 5-12, and parents in the same hybrid school. The research question was:

> What do individuals from various groups in this school perceive as the shared commitments about hybrid learning?

"Self"-Regulation for Engagement in Hybrid Learning

Online learning research has drawn on theories of *self-determination* (e.g., Deci & Ryan, 2012) and *self-regulation of learning* (e.g., Zimmerman, 2013) to describe how learner engagement is initiated and maintained. In self-determination theory, learning design structures should be present but there should not be so much structure that learners become so frustrated that they disengage (Pintrich, 1999).

Engagement is the effort that students invest in learning (Fredericks et al, 2004; Hughes et al, 2008). Scholars often discuss three specific types: behavioral, cognitive, and emotional (Halvorson & Graham, 2019). *Behavioral engagement* involves measurable, observable actions students complete to learn content (Zimmerman & Schunk, 2001). *Cognitive engagement* is the expenditure of thoughtful energy to learn (Finn & Zimmer, 2012). *Emotional engagement* is the presence of facilitating emotions such as interest and the absence of task-withdrawing emotions, such as distress (Reeve, 2012).

To regulate learning through engagement, students use *regulatory apparati*, including resources (e.g., databases, spell checkers, pacing guides) and strategies (e.g., using tabs to navigate between multiple sites simultaneously, help seeking online and in-person) (Roscoe et al., 2013). Recent attention has focused on learners' perceived sense of belonging, the relationships they have with physically proximate peers, their teachers, and the subject matter (Borup et al., 2020; Stevens & Rice, 2016). In this way, the "self" in *self-regulation* is not entirely accurate. Educators from the school context, parents, and peers are part of the *regulatory apparati* available in a learning setting during social engagement.

Research about how parents engage and monitor students in hybrid learning is emerging. In traditional settings, parents have a basic duty to bring children to the school and respond to school communication (Epstein, 2001; Hoover-Dempsey et al., 2005). However, in online learning, parents accept additional responsibilities (Borup et al., 2013; Borup et. al., 2015; Crouse et al., 2018; Ortiz et al., 2021). In fact, Borup, et al., 2015 found that parental support centered heavily on ensuring learner self-regulation using resources and the employment of strategies. For children who have been identified with disabilities, parents advocate for children to be allowed into the online setting *and* to benefit from it, including efforts parents make to facilitate interaction with peers online (Rice & Ortiz, 2022). However, online teachers report that they are the ones doing yeoman's work monitoring and supervising to keep children "self"-regulated so they can engage (Stevens & Rice, 2016; Crouse et al., 2018). Being in the physical presence of the learner while learning may be integral to who (parent or teacher) supports the "self"-regulation. It is not feasible to place all responsibility on either a parent or a teacher to support the student in a hybrid school because the student changes venues for learning. The current research located a school using hybrid learning and varying shifting schedules and then determined how shared responsibilities were perceived.

Methodology

We employed a convergent parallel mixed methods design for this research (Teddlie & Tashakkori, 2009). Quantitative and qualitative data were collected and analyzed independently and over a continuous timeframe. Findings from both methods were analyzed concurrently to allow each set of data (qualitative and quantitative) to inform the results and interpretations of each method (McCrudden et al., 2019; Schoonenboom, & Johnson, 2017). The authors received human subjects' approval for the study.

School Context

The site for this study, Tierra Academy Charter School (TACS), serves grades 5-12 as a hybrid school program. At TACS, all students have an individualized learning plan or ILP. Using

digital curriculum available to the learner 24/7 and instructional specialists in the school building five days a week, educators at TACS aim to individualize instruction while also supporting a needs-based, differentiated educational structure. TACS uses a flexible weekly scheduling model offering all students a choice in attendance from fully online to five days per week on campus. When students were not attending fully online, they attended on campus during the week for on-campus academic and enrichment instruction with teachers or attended one-on-one tutoring offered both online and in person. Students were allowed to be on campus even when they were not scheduled as part of the flexible model, but if they were scheduled to be on campus, they were required to be on campus.

Survey Instrument

Teachers, parents, and students responded to an online survey about support for learning and achieving at school. The first step in creating the survey instrument was for the research team to create the survey items for each of the study participants (parents, teachers, and students). Survey items were designed using research support alongside the interests of the administrative team. Table 1 links key studies to the final constructs and survey items. In identifying support, we reviewed studies focused on the K-12 context and that drew characteristics of hybrid framing where there were online and in-person elements occurring at different times.

Table 1

Pairing of Survey Constructs and Literature

Constructs for Survey Items	**Literature Support from K-12 Hybrid Studies**
Behavioral Engagement	
Number of access points	Alvarado-Alcantar et al. (2018) highlighted the importance of reducing access in the LMS to a few steps.
Praise/rewards	Stevens and Rice (2016) found that adding emoji to their work along with verbal praise were important simple rewards for students. Rice and Carter (2016) also documented an LMS dashboard's ability to show progress as a reward and regulator for teachers and students.
Feedback	Kazakoff et al. (2018) and Villanueva (2021) documented the use of feedback about academic work in hybrid learning. The feedback provided specific information about performance and set new goals for the future.
Cognitive Engagement	
Challenging curriculum	Leacox and Jaxson (2014) and Prescott et al. (2018) conducted studies highlighting the need for a challenging curriculum in K-12 hybrid learning. In both cases, students gained language skills rapidly with consistent access to lessons that increased in difficulty.
Suited to interests	Chiu (2021) found that hybrid environments that supported learning autonomy were more likely to engage students. Similarly, Rice and Stevens (2021) found that students customized assignments in the hybrid environment to tailor them to their interests and often increased the cognitive challenge.
Leads to achievement	Bottge et al. (2014), Hawkins-Lear & Grisham-Brown (2018), Kazakoff et al. (2018), Leacox and Jaxson (2014) and Prescott et al. (2018) have all found demonstrable improvements in learning over control groups, while Harrell and Wendt (2019) found positive perceptions of achievement.

Enables choice	Kundu et al. (2021) modified the environment using learning choice to optimize learner engagement. They were able to eliminate disengagement after four weeks and maintain it for the remaining nine weeks of the study.
Emotional Engagement	
Overall Manageable frustration level	Billingsley et al. (2009) and Bingham (2016) reported on the potential for frustration in hybrid learning when tasks are not appropriate for teachers who are unable to manage the environment.
Online frustration	Accessibility issues where students cannot find, read, or use materials is a primary course of frustration when working online (Alvarado-Alcantar et al., 2020; Crouse et al., 2018; Rice & Ortiz, 2022). Schmidt (2013) noted the frustration of trying to get help online when it is unavailable.
In-person frustration	Mormando (2022) found student frustration in the in-person classroom setting. Teachers of students with disabilities lacked the autonomy they needed to make accommodations for students in a hybrid classroom.
Perception of positive emotions for learning	Villanueva (2020; 2021; 2022) documented possibilities for students' positive emotions during hybrid learning.
Social Engagement	
Peer-to-peer interaction opportunities	Garrett Dikkers et al. (2014) and Whiteside, et al. (2016) documented the role of peer-to-peer interaction opportunities in hybrid learning environments from helping students feel prepared for future educational opportunities.
Teacher-learner interaction	Garrett Dikkers et al. (2015), Stevens and Rice (2016), and Villanueva (2021; 2022) all framed teacher-learner interaction as a trusting relationship in hybrid learning.
Supportive of Friendships	Rombot et al. (2020) highlighted the potential to use hybrid learning to build and maintain not just collegial relationships between learners, but true friendships.

The second step was to create a separate Google Survey Form for each participating group and to make sure they have access to the Google Survey Form. One of the research team members reached out to the TACS director and asked for assistance in sharing the Google Survey Form with the teachers, parents, and students at the school. The director asked teachers via email to consider participating in the Google Survey and to allow time for their students to complete the student survey during their class time. The director emailed the Google Survey Form to guardians and asked for their participation in the survey. All interested students, guardians, and teachers completed the Google Survey form. To explore the research question, a member of the research team conducted follow-up, semi-structured interviews with a self-nominated subgroup. The reliability analysis of the survey used the items on a scale comprising four Likert items (1= strongly disagree, 4 = strongly agree). Cronbach's alpha showed the questionnaire to reach acceptable reliability, $\alpha = 0.88$. All items appeared to be worthy of retention as the range of means was 3.4-4.2 (SD=1.9-2.1). Table 2 contains final survey items and their responses.

Interview

In-person interviews were conducted with interested teachers and students. The interview questions are outlined in Table 2. An invitation email was sent to all teachers in the school asking them to consider participating in the in person interviews; five teachers volunteered to be interviewed (four female and one male). In addition, six volunteer students were interviewed,

three boys (5th, 12th and 9th grade), as well as three girls (8th, 9th, and 11th grade). Table 2 provides additional information about these participants. A researcher visited the school site and met individually with the interviewed teachers and students. Interview length varied from 20 minutes to 1.5 hours long. Each interview session was video recorded for transcribing and data analysis purposes. The transcribed texts were analyzed. Parents who participated in online surveys were emailed and invited to participate in a personal interview or answer additional questions in electronic form. Six parents responded to the electronic form. Responses from parents were incorporated into the survey findings and data. 1 out of the 6 parents is also a teacher at the school. Interview topics appear in Table 2.

Table 2

Interview Protocol

Participants	Interview Questions
Educators	1. How did you come to be an educator at this school? 2. What elements of the school do you think are especially supportive of a hybrid learning mission? (if any) 3. What is a typical workday like in terms of time spent planning, instructing (online and in-person), and evaluating? What about the rhythm of a week for these activities? 4. What are some of your "tried and true" instructional practices for supporting students in hybrid environments? 5. What are some of your "tried and true" engagement practices for supporting students in hybrid environments? 6. How do faculty collaborate to design hybrid learning activities and materials? 7. How do you choose instructional materials for students for both online/in-person instruction? 8. How do you build community with parents and other facilitators (if at all)? 9. How has working here increased your subject matter/pedagogical/technological expertise (if at all)? 10. What is your long-term vision for making a curriculum that builds learning communities?
Guardians	1. What were the circumstances surrounding your child's enrollment at the school? 2. What aspects of hybrid learning help your child persist in their coursework? What specifically engages them (if anything)? 3. What is a typical "school day" like in terms of working on an offline? What is the rhythm of a week? 4. How does communication with teachers about student learning and hybrid curriculum build community (if at all)? 5. How has hybrid learning opportunities assisted with engagement in school for your child? 6. How has working with your child hybrid coursework increased your parenting/technological expertise (if at all)? 7. What communities has your child built with peers, teachers, or others from doing hybrid learning at the school (if any)? 8. What is your overall vision for your child's hybrid learning experience? 9. What advice would you give about supporting children/adolescents in hybrid learning?

Students	1. What led you to take classes at this school? 2. What did you expect hybrid learning to be like? Did it meet your expectations? 3. Describe a specific lesson that you liked that had both in person and online elements. What did you like about that lesson? Was anything difficult? How did you solve problems? 4. How do the teachers at your school support you during both the online and the in-person learning? 5. How has learning at this hybrid school helped you build technological skills (if at all)? 6. How has learning at this school helped you build a social community (if at all)? 7. How has learning in a hybrid setting helped you take charge of your learning (if at all)? 8. What is your typical school like in terms of time spent on and offline doing lessons? 9. When you need help with your work, what is your process for obtaining it? 10. What are your long-term goals for your learning as a hybrid learner? 11. What advice would you give to a student who was new to hybrid learning?

Data Analysis

Data from all research instruments was analyzed by aligning participants' responses to create categories/themes pertaining to the responses. A separate document was created for each emerging response/ category/theme. Researchers organized the data and independently coded responses question-by-question for each group (students, parents, teachers) in relationship to the research questions and compared codes. Where disagreement existed, researchers discussed decisions and documented a future course of action (Merriam, 1998). Teacher data was examined first; parents second; student responses were accounted for last. Students' survey responses were considered last because we anticipated a greater range of responses due to potential developmental differences and the potential that they would have less familiarity with research processes. After the first round of coding for each group, researchers compared findings to ensure agreement. This procedure was followed for each group. When 95% agreement was reached for the questions in a group, researchers moved to the next group. Researchers met to collapse codes into themes tied to the research questions and survey data (Saldaña, 2012). Final themes are presented in the findings section.

Findings

Data gathered from participants (See Appendix A for survey data) reflected the theme of shared advocacy for meeting student needs. Each of the shared sub-themes are discussed below. Teachers also shared one unique sub-theme around the labor it requires to collaborate.

Advocacy Through Access to Instruction

Participants in this study agreed that access to instruction was a primary concern at the school. This access to instruction occurred primarily through collaborative scheduling and goal setting.

Collaborative Scheduling

Teachers, families, and students agreed that the flexibility of having the kids do both online and in-person learning is crucial. This flexibility was described as opportunities but not requirements to attend in-person school two times a day. One parent elaborated on the need to have in-person learning as an option, stating, "without the live taught aspect of the curriculum, there would be little engagement."

Support for students in-person alongside hands-on, project-based learning built into the schedule contributes to that flexibility, according to the participants. One teacher said, "you cannot just put the kids on the computer and that's it." Participants agreed the opportunity to schedule in-person enrichment time for core subjects also supported students, "...they kind of married together to provide a really supportive environment."

Interviewed students discussed the amount of time they spent both online and in in-person learning each day. For example, one student spent close to 17 hours per week online and 11 hours in-person; another student stated that he does most of the online work for his schooling over the weekend; he also attended in-person school two days a week; a third student reported spending equal amounts of time online and in-person learning, 5 or 6 hours a day. A fourth student reported attending school during in-person days and spent 4 hours a day during schoolwork online on days where they did not attend in-person.

Parents stressed that while routines were important to establish with their children, they also appreciated the flexibility of the school's schedule. Parents reported collaboration with their children to create a schedule; "I created a schedule for them to follow on the days they are not on campus. I believe it is creating good habits to continue to do their best daily," one parent said.

Collaborative Goal Setting

In addition to flexible scheduling to provide access to instruction, participants also cited the opportunity to collaborate on learning goals as an important to the positive perception of the school. In the survey, 52 % of educators, 31% of students, and 47% of parents agreed that students make choices about topics of study. In addition to topics, students can make choices about whether to use digital resources. For example, regarding when to use digital technologies to teach or learn, 71% of teachers, 64% of students, and 55% of parents believed they have choices. One teacher explained, "we really wrap our minds around students because we are so small that we can do that." In support of the positive community reputation of TACS, 90 % of teachers, 75% of students, and 95% of parents indicated that they believed that the school has created a positive community climate.

Teachers, parents, and students talked about the importance of communication amongst each other to meet students' learning goals. Parents also noted that TACS has a variety of opportunities for them to participate in their children's learning. One parent stated that to collaborate successfully with the school and their children's learning goals, "Parents need to be involved and understand the software that is being used and the tools they have to follow up." It has been easier to stay involved and know what students are working on with the online curriculum.

Advocacy Through Learner Support

The second way that participants perceived as important was the advocacy achieved through deliberate attempts at learner support. The specific sources of support included high expectations for learning reflected in the school's mission, peer support, and teacher support.

High Expectations for Learning

An overall theme emerged from the collected data connected to high expectations from the school and their families. During interviews, participants discussed the importance of monitoring students and encouraging participation. One educator said, "[learners] are not going to engage if they are uncomfortable, and if they don't have any motivations or rewards." She continued by stating it is the role of the teachers to be deliberate about making instruction interesting for learners.

Students and parents discussed the importance of doing well academically at TACS. Survey responses indicated that 65% of educators, 57% of students, and 78% of parents believed that students at the school achieved high grades. During interviews, two students shared how important it was for them to maintain pace with their work. All interviewed students indicated a sense that they needed to learn to use their learning time appropriately. One student stated that she is learning more about how responsible she can be on her own, "And now I'm learning that I have a voice in my head saying you have to do work."

Parents who participated in interviews expressed an expectation that TACS will teach their children to balance work, school, and down time; also, they hope the teachers will teach their children self-discipline. One parent stated, "The environment of self-advocacy at [TACS] was very different from the municipal schools. This has bled into many aspects of her life." One parent explained that hybrid learning allowed students to take dual credit classes at the local branch campus of the state research university in addition to their regular schoolwork.

> [TACS] offers so many resources that apply to life after school like college prep, discussions around tech/trade schools.

Another parent stated that the hybrid learning has helped her child challenge himself with more difficult coursework. She said:

> My son signed himself up for all AP classes, he became an advocate for himself when it came to asking for help, more work and opportunities focused on school. My son is better at communicating with us as parents because he can physically show us grades, courses, and test scores which I think is a HUGE benefit to schoolwork.

Overall, parents expressed a perception that their children were able to understand the work that they had to do, and they were generally willing and able to do that work.

Peer Support

Four of six interviewed students commented positively about peer interactions. Survey responses revealed that 29% of educators, 10% of students, and 56% of parents stated that the instructional practices inspired positive emotions in students. In addition, survey findings

indicated that 71 % of educators, 50 % of students, and 58% of parents believed that students interact regularly with each other to learn. Three students stated that when they needed help with their work, they asked their friends first and then the teachers. Another student stated he enjoyed the learning labs where he and his friends collaborated to build a laser cutter:

> So let's say one thing that I liked about the lesson was I was able to learn how to work with others better and one difficult part was when we couldn't find the activation key…so we basically took the whole room apart and looked for it.

Another student described how he enjoyed practicing the piano at home and then playing with other people at school.

Students also talked about the benefits of interacting with the front office staff and teachers when they are present in the building. Students shared that teachers know the students very well due to the small class sizes with 10 students in a class. A parent said, "My son enjoys gardening in a local garden by the school. He likes the steam programs they offer, especially cooking, which he is a participant in each year."

Some parents expressed that they worried about socialization. However, according to the survey, 76% of educators, 82 percent of students, and 75% of parents believed that students at TACS interacted regularly with each other as friends.

Even parents that expressed hesitancy about socialization opportunities during interviews described multiple types of peer interactions and other activities at TACS, such as team building, camping, hiking, ropes courses, playing in rock bands, culinary arts, doing local and global project-based learning and small group tutoring opportunities.

Teacher Support

In the interviews and the survey, educators, students, and parents agreed that TACS staff supported both online and in-person learning. One teacher described how, in addition to students choosing days to come to campus, the school also offered additional, optional days for students to come to the building to receive help with schoolwork. Survey results indicated that 90% of educators, 59% of students, and 59 % of parents believed that students received instructions for improving their grades. In addition, the survey showed that 90% of teachers, 59% of students, and 80% of parents believed that teachers TACS interacted regularly with students to support learning. A teacher stated, "…the option is always, they can come here. We're always available if they need that face-to-face." She highlighted the importance of going over the online curriculum with students face-to-face to help them understand it. She said, "…repetition, repetition, repetition, and clarifying it, and applying something in a life skills way" is the key to helping kids. Working on the lessons without teacher support could become frustrating for students.

Survey results also indicated that 48% of educators, 34 % of students, and 24% of parents believe students experienced at least some frustration while working through their lessons. During online learning, the survey showed that 33 % of educators, 36 % of students, and 53% of parents believed that students could work with the online curriculum without frustration. For

offline work, the survey showed that 67 % of educators, 45 % of students, and 68% of parents believed that students experienced the offline curriculum without frustration. One student shared the benefits of enrichment classes that are in-person when students are having a hard time with their academic skills. He stated, "There is a lot of support here for you if you get stuck."

During interviews, all students expressed a perception that they were receiving a better education at TACS than their previous school. One parent stated, "Our younger [child] never used to like school, now she feels okay about going to school and is looking into colleges. The teachers somehow find a way to motivate the students to do well." Another parent elaborated on trusting relationships. "Teachers are very open and never treat me like I am asking dumb questions. They do get back to me in a timely manner and always have a solution."

Tensions and Gaps in Advocacy

Although there was overall agreement between the three groups, teachers voiced specific concerns that did not emerge from data collected from students and parents. Among these concerns were the effort it takes to locate and use appropriate instructional materials, and additional time needed to communicate and collaborate with colleagues and parents.

Effort to Find Materials for Students

Teachers commented on the energy and work it takes to find instructional materials for students. TACS purchases most of their instructional materials from a single vendor, but teachers must request permission to add on additional or alternative activities for students to meet their individual academic needs. During interviews, teachers shared how important the in-person enrichment classes were for students, especially students who were struggling. Many teachers shared that they take the online instruction and break it into smaller pieces to support students. Teachers were also giving support through graphic organizers and other writing strategies. The school also had purchased and was using a developmental reading program. All these efforts required additional labor from teachers.

Collaborative Efforts and Relational Work with Colleagues and Parents

Educators shared their collaboration efforts and relational work with colleagues and families to meet the needs of their students. Collaboration meetings occur at the end of the day at TACS. Collaboration teams meet and discuss topics relevant to the school. During these meetings, teachers take on roles in facilitating and choosing the topics of discussion. However, during interviews, most teachers expressed a desire for more time to sit together and talk about student work.

Teachers also have regular after-school teacher meetings. The teachers found these meetings beneficial for talking with other teachers about the online curriculum and planning face-to-face instruction activities. Teachers desired more time to prepare for the online and in-person lessons. A teacher who was new to the profession described using that time to seek support from more experienced teachers. In general, there was a sense that teachers supported one another and shared resources. Even with this general sense of community, one teacher stated that his planning usually takes place on the weekends, at home. During interviews, all teachers expressed appreciation for students and parents. All expressed an overall contentment with hybrid learning, yet they wished that their workload was more manageable.

Discussion

In this study, researchers gathered information from teachers, parents, and students at TACS. Each group expressed positive perceptions of the school. Parents and students appreciated the opportunities to have individualized scheduling and choices about when to come to school in person and when to do work online. The students and parents also reported high levels of learner support. Much of the credit for this high level of support was given to teachers. While the teachers were pleased the students were doing well, they felt their workload was high.

Practical Implications

In this school that uses hybrid learning with flexible schedules, there is an appreciation for the flexibility and an understanding that such an opportunity provides the space for students to practice self-regulation of learning. Even so, they need help from both parents and teachers (Borup et al., 2020). The way that these groups seem to be sharing the responsibility—for now—is for parents to do as much as they can and then lean on the school. This works for families where there might already be a lot of resources. It seems that where students are falling behind and needing to be at the school more, it is because families are less able to take care of this independently. This will likely remain a barrier to bringing in more families to a similar setting.

Teachers might also need more preparation and support to take full advantage of the ways technologies can help them (Roscoe et al. 2013). For example, Alvarado-Alcantar et al. (2018) have warned about how frustrated students might become with complicated online instructional materials. Teacher education programs must take these likely shortcomings in instructional materials seriously and prepare teachers to expect this and help teachers find ways to compensate for it in ways that do not require so much teacher labor. Also, researchers like Rice and Carter (2016) highlighted how teachers used the dashboard to regulate their work and students' work; Kazakoff et al., (2018) and Villanueva (2021, 2022) have shown patterns for feedback, and Stevens and Rice (2018) showed how an emoji from a teacher on online work operated to keep students on task. Teachers in this study seem to have needed more help in learning how to use strategies other than "come in and I will teach you in person." Moreover, such thinking undermines the strong theme of peer support where students benefited from working with others in the hybrid environment (Garrett Dikkers et al. 2014, Garrett Dikkers et al., 2015; Rombot et al. 2020; Whiteside et al., 2016).

Research Implications

Previous research has documented achievement in hybrid learning environments (Bottge et al., 2014; Hawkins-Lear & Grisham-Brown, 2018; Kazakoff et al., 2018; Leacox & Jaxson, 2014; Prescott, et al., 2018). Not only must learning occur comparably with and even over control groups, the perception of achievement is also important (Barbour & Harrison, 2016; Kuo et al., 2014; Gough et al., 2017; Harrell & Wendt, 2019). Perceptions are crucial because strong feelings of frustration can be reported in hybrid environments (Bingham, 2016; Mormando, 2022). There was a sense among study participants that frustration is universally harmful and should be eliminated. From a theoretical standpoint, some struggle while learning is part of what creates cognitive challenge (Pintrich, 1999; Reeve, 2012). Future research should take the issue of frustration from both teachers and students in hybrid learning environments more seriously. What frustrations are acceptable? What support can be offered? What dialogue needs to occur to prepare teachers and students to expect and manage frustration?

Another important finding focused on students' need for strong relationships inside and outside of school with both teachers and peers. Some research has suggested that peer relationships in blended environments can promote outcomes that go beyond the immediate school (e.g., planning for college) (e.g., Whiteside et al., 2016). Other research has looked at the possibilities for students to become friends in hybrid spaces (Rombot et al., 2020). Parents and students seemed to blend peers and teachers into a community; this is an interesting phenomenon that deserves additional attention as it does not fit tidily into cognitive models of self-regulation of learning and emotion typically used to understand engagement.

Policy Implications

Policy support is essential for designing and evaluating hybrid programs beyond pandemic circumstances. While flexible scheduling seems to be valuable to families, policy makers—state and local—may be averse to moving away from traditional thinking about regular daily attendance and seat time (Arnett, 2021). Also, policies need to consider what funding and other resources are needed to run high quality flexible programs. Resources might include funding for lower student-to-teacher ratios, more access to digital tools and resources, earlier and more rigorous evaluation of digital instructional materials for accessibility and suitability, and more frequent feedback opportunities for teachers, parents, and students. The relationships that students had did seem to make students and parents feel comfortable and happy. Should student happiness be a policy goal for strong hybrid learning programs? If so, how would policy makers measure and ascertain it? Finally, we wonder, what role *can* policy play in making joyful spaces for students to have agency over their relationships with each other, with teachers, with technologies, and with their learning?

Conclusion

The purpose of this study was to learn about the perceptions of teachers, parents, and students in a school using hybrid learning with flexible schedules. Overall, the school's particular hybrid design was perceived as supportive of student learning. Since this study took place at one site and since hybrid programs, by definition, can vary so much in structure, it is important to realize this study cannot generalize to other hybrid programs. Instead, it offers a description of a program that might resonate with other programs with similar characteristics. What may be clear is that K-12 schools can be spaces for exploring hybrid scheduling regimes in ways that account for community goals and preferences.

Declarations

The authors declare no conflicts of interest.

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References

Alvarado-Alcantar, R., & Keeley, R. (2020). Students with specific learning disabilities' experiences with instructional materials and programs in a blended high school history classroom: A phenomenological study of accessibility. *Journal of Online Learning Research, 6*(3), 201-220. https://www.learntechlib.org/primary/p/215023/

Alvarado-Alcantar, R., Keeley, R., & Sherrow, B. (2018). Accessibility and usability of preferences in blended learning for students with and without disabilities in high school. *Journal of Online Learning Research*, *4*(2), 173-198.

Arnett, T. (2021). Breaking the mold: How a global pandemic unlocks innovation in K-12 instruction. *Clayton Christensen Institute for Disruptive Innovation*. https://files.eric.ed.gov/fulltext/ED610663.pdf

Barbour, M., Brown, R., Waters, L. Hoey, R., Hunt, J. Kennedy, K., Ounsworth, C., Powell, A., & Trimm, T. (2011). *Online and blended learning: A survey of policy and practice from K-12 schools around the world.* International Association for K-12 Online Learning. https://files.eric.ed.gov/fulltext/ED537334.pdf

Barbour, M. & Harrison, K. (2016). Teachers' perceptions of K-12 online: Impacting the design of a graduate course curriculum. *Journal of Educational Technology Systems, 45*(1), 74-92. https://doi.org/10.1177/0047239516637072

Bingham, A. J. (2016). Drowning digitally? How disequilibrium shapes practice in a blended learning charter school. *Teachers College Record*, *118*(1), 1-30.

Borup, J., Graham, C., West, R., Archambault, L., & Spring, K. (2020). Academic Communities of engagement: An expansive lens for examining support structures in blended and online learning. *Educational Technology Research and Development, 68*, 807-832. http://dx.doi.org/10.1007/s11423-020-09744-x

Borup, J., Graham, C. & Davies, R. (2013). The nature of parental interactions in an online charter school. *American Journal of Distance Education*, *27*(1), 40-55. https://doi.org/10.19173/irrodl.v24i1.6664

Borup, J., Stevens, M. & Waters, L. (2015). Parent and student perceptions of parent engagement at a cyber charter high school. *Online Learning, 19*(5), 69-91.

Bottge, B., Ma, X., Gassaway, L., Toland, M. Butler, M., & Cho, S. (2014). Effects of blended instructional models on math performance. *Exceptional Children*, *80*(4), 423-437. https://doi.org/10.1177/0014402914527240

Chiu, T. (2021). Student engagement in K-12 online learning amid COVID-19: A qualitative approach from a self-determination theory perspective. *Interactive Learning Environments, 6*, 3326-3339. https://doi.org/10.1080/10494820.2021.1926289

Crouse, T., & Rice, M. (2018). Learning to serve students with disabilities online: Teachers' perspectives. *Journal of Online Learning Research*, *4*(2), 123-145.

Deci, E., & Ryan, R. (2012). Self-determination theory in health care and its relations to motivational interviewing: a few comments. *International Journal of Behavioral Nutrition and Physical Activity*, *9*(1), 1-6.

Digital Learning Collaborative (2019). *Snapshot 2019: A review of K-12 online, blended, and digital learning.* https://www.evergreenedgroup.com/keeping-pace-reports

Epstein, J. (2001). *School, family, and community partnerships: Preparing educators and improving schools*. Westview Press. https://www.govinfo.gov/content/pkg/ERIC-ED467082/pdf/ERIC-ED467082.pdf

Finn, J. & Zimmer, K. (2012). Student engagement: What is it? Why does it matter? In S. Christenson, A. Reschly & C. Wylie. (Eds.) *Handbook of research on student engagement* (pp.97-131). Springer.

Fredericks, J., Blumenfeld, P., & Paris, A. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109. https://doi.org/10.3102/00346543074001059

Garrett Dikkers, A., Lewis, S., & Whiteside, A. (2015). Blended learning for students with disabilities: The North Carolina Virtual Public School's co-teaching model. In M. Rice (Ed.) *Exploring pedagogies for diverse learners online* (pp. 67-93). Emerald Group Publishing Limited.

Garrett Dikkers, A., Whiteside, A. & Lewis, S. (2014). Do you blend? Huntley High School does. *eLearn*, *2014*(12). https://dl.acm.org/doi/abs/10.1145/2693839.2686759

Gough, E., DeJong, D., Grundmeyer, T., & Baron, M. (2017). K-12 teacher perceptions regarding the flipped classroom model for teaching and learning. *Journal of Educational Technology Systems*, *45*(3), 390-423. https://doi.org/10.1177/0047239516658444

Halverson, L. & Graham, C. (2019). Learner engagement in blended learning environments: A conceptual framework. *Online Learning*, *23*(2), 145-178.

Harrell, K., & Wendt, J. (2019). The impact of blended learning on community of inquiry and perceived learning among high school learners enrolled in a public charter school. *Journal of Research on Technology in Education*, *51*(3), 259-272. https://doi.org/10.1080/15391523.2019.1590167

Hawkins-Lear, S., & Grisham-Brown, J. (2019). Teaching early math skills to young children with disabilities in rural blended early childhood settings. *Rural Special Education Quarterly*, *38*(1), 15-25. https://doi.org/10.1177/875687051879290

Hoover-Dempsey, K. Walker, J., Sandler, H., Whetsel, D., Green, C., Wilkins, A., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal*, *106*(2), 105-130. https://doi.org/10.1086/499194

Horn, M., & Staker, H. (2017). *Blended: Using disruptive innovation to improve schools*. John Wiley & Sons.

Hughes, J., Luo, W., Kwok, O., & Loyd, L. (2008). Teacher-student support, effortful engagement, and achievement: A 3-year longitudinal study. *Journal of Educational Psychology*, *100*(1), 1-14. https://doi.org/10.1037%2F0022-0663.100.1.1

Johnson, N., Seaman, J., & Poulin, R. (2022). Defining different modes of learning: Resolving confusion and contention through consensus. *Online Learning*, *26*(3), 91-110.

Kazakoff, E., Macaruso, P., & Hook, P. (2018). Efficacy of a blended learning approach to elementary school reading instruction for students who are English learners. *Educational Technology Research and Development*, *66*, 429-449. https://link.springer.com/article/10.1007/s11423-017-9565-7

Kuo, Y., Belland, B., Schroder, K., & Walker, A. (2014). K-12 teachers' perceptions of and their satisfaction with interaction type in blended learning environments. *Distance Education*, *35*(3), 360-381. https://doi.org/10.1080/01587919.2015.955265

Kundu, A., Bej, T., & Rice, M. (2021). Time to engage: Implementing math and literacy blended learning routines in an Indian elementary classroom. *Education and Information Technologies*, *26*(1), 1201-1220. https://link.springer.com/article/10.1007/s10639-020-10306-0

Leacox, L., & Jackson, C. (2014). Spanish vocabulary-bridging technology-enhanced instruction for young English language learners' word learning. *Journal of Early Childhood Literacy*, *14*(2), 175-197. https://doi.org/10.1177/1468798412458518

McCrudden, M. Marchand, G., & Schutz, P. (2019). Mixed methods in educational psychology inquiry. *Contemporary Educational Psychology*, *57*, 1-8.

Merriam, S. (1998). *Case study research in education.* Jossey-Bass.

Mormando, S. E. (2022). *Special education itinerant teacher engagement with students enrolled in blended learning classes post pandemic*. (Doctoral Dissertation. Widener University) https://www.proquest.com/docview/2735849142?pq-origsite=gscholar&fromopenview=true

Ortiz, K., Rice, M., Curry, T., Mellard, D., & Kennedy, K. (2021). Parent perceptions of online school support for children with disabilities. *American Journal of Distance Education*, *35*(4), 276-292. https://doi.org/10.1080/08923647.2021.1979343

Pintrich, P. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, *31*(6), 459-470. https://doi.org/10.1016/S0883-0355(99)00015-4

Prescott, J., Bundschuh, K., Kazakoff, E., & Macaruso, P. (2018). Elementary school–wide implementation of a blended learning program for reading intervention. *The Journal of Educational Research*, *111*(4), 497-506. https://doi.org/10.1080/00220671.2017.1302914

Reeve, J. (2012). A self-determination theory perspective on student engagement. In S. Christenson, A. Reschly & C. Wylie. (Eds.) *Handbook of research on student engagement* (pp. 149-172). Springer.

Rice, M. & Carter Jr, R. (2016). Online teacher work to support self-regulation of learning in students with disabilities at a fully online state virtual school. *Online Learning*, *20*(4), 118-135.

Rice, M., & Ortiz, K. (2022). Parents of children with special educational needs' shared work in fully online learning. *Journal of Research on Technology in Education.* https://doi.org/10.1080/15391523.2022.2030269

Rice, M. & Stevens, M. (2021). Intellectual agency of linguistically diverse students with disabilities in a blended learning environment. In A. Picciano, C. Dziuban, C. Graham, & P. Moskal (Eds). *Blended learning* (pp. 231-246). Routledge.

Rombot, O., Boeriswati, E., & Suparman, M. (2020). Improving reading comprehension skills of international elementary school students through blended learning. *Al Ibtida: Jurnal Pendidikan Guru MI*, *7*(1), 56-68.

Roscoe, R., Segedy, J., Sulcer, B., Jeong, H., & Biswas, G. (2013). Shallow strategy development in a teachable agent environment designed to support self-regulated learning. *Computers & Education*, *62*, 286-297. https://doi.org/10.1016/j.compedu.2012.11.008

Saldaña, J. (2012). *The coding manual for qualitative researchers.* Sage.

Schmidt, J. (2013). *Blended learning in K-12 mathematics and science instruction–An exploratory study*. (Doctoral Dissertation, University of Nebraska at Omaha). https://www.proquest.com/openview/13d38fbeef7824008303558861c3b23d/1?pq-origsite=gscholar&cbl=18750

Stevens, M., & Rice, M. (2016). Inquiring into presence as support for student learning in a blended learning classroom. *Journal of Online Learning Research*, *2*(4), 447-473.

Staker, H. (2011). *The rise of K-12 blended learning: Profiles of emerging models*. Innosight Institute. https://files.eric.ed.gov/fulltext/ED535181.pdf

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Sage.

Villanueva, J. Redmond, P., & Galligan, L. (2022). Manifestations of cognitive presence in blended learning classes of the Philippine K–12 system. *Online Learning, 26*(1), 19-37.

Villanueva, J. (2021). Teaching presence in K-12 blended learning classes under the alternative delivery mode. *International Journal on Open and Distance e-Learning, 7*(1), 31-52.

Whiteside, A., Garrett Dikkers, A., & Lewis, S. (2016). "More confident going into college": Lessons learned from multiple stakeholders in a new blended learning initiative. *Online Learning*, *20*(4), 136-156.

Williams, C. (2023). The pandemic's virtual learning is now a permanent fixture of America's schools. *74Million,* May 1, 2023. https://www.the74million.org/article/the-pandemics-virtual-learning-is-now-a-permanent-fixture-of-americas-schools/

Zimmerman, B. (2013). Theories of self-regulated learning and academic achievement: An overview and analysis. In B. Zimmerman (Ed.) *Self-regulated learning and academic achievement* (pp. 1-36) Routledge.

Zimmerman, B., & Schunk, D. (Eds.). (2001). *Self-regulated learning and academic achievement: Theoretical perspectives*. Routledge.

Appendix A
Survey Findings

Category #1: Behavior Engagement Statements					
Statement #1 Number of access points: Students can access materials without logging into multiple accounts.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher			9.5% (2 out of 21)	28.6% (6 out of 21)	61.9% (13 out of 21)
Student	1.5% (2 out of 134)	6.8% (9 out of 134)	24.8% (33 out of 134)	33.8% (45 out of 134)	33.1 % (44 out of 134)
Guardians			15.6% (7 out of 45)	44.4 % (20 out of 45)	40% (18 out of 45)
Statement #2 Praise/Rewards: Students receive praise for their work.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher			19% (4 out of 21)	42.9% (9 out of 21)	38.1% (8 out of 21)
Student	8.3% (11 out of 134)	17.4% (23 out of 134)	28% (37 out of 134)	31.8% (42 out of 134)	14.4% (19 out of 134)
Guardians		2.2% (1 out of 45)	17.8% (8 out of 45)	37.8% (17 out of 45)	42.2% (19 out of 45)
Statement #3 Feedback: Students receive instructions for improving their performance.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher			9.5% (2 out of 21)	38.1% (8 out of 21)	52.4% (11 out of 21)
Student	2.3% (3 out of 134)	13% (17 out of 134)	26% (34 out of 134)	42% (55 out of 134)	16.8% (22 out of 134)
Guardians	2.2% (1 out of 45)	2.2% (1 out of 45)	13.3% (6 out of 45)	42.2% (19 out of 45)	40% (18 out of 45)

Category #2: Cognitive Engagement Statements					
Statement #1 Challenging curriculum: The lesson materials at this school challenge students to think.					
Participant Type	**1 (not at all)**	**2**	**3**	**4**	**5 (extremely likely)**
Teacher			14.3% (3 out of 21)	52.4% (11 out of 21)	33.3% (7 out of 21)
Student	2.3% (3 out of 134)	5.3% (7 out of 134)	28.6% (38 out of 134)	51.9% (69 out of 134)	12% (16 out of 134)
Guardians		2.2% (1 out of 45)	15.6% (7 out of 45)	33.3% (15 out of 45)	48.9% (22 out of 45)
Statement #2 Suited to interests: The lesson materials at this school are interesting to students.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher	14.3% (3 out of 21)	42.9% (9 out of 21)	38.1% (8 out of 21)	4.8% (1 out of 21)	14.3% (3 out of 21)
Student	9% (12 out of 134)	20.9% (28 out of 134)	35.1% (47 out of 134)	29.9% (40 out of 134)	5.2% (7 out of 134)
Guardians	2.3% (1 out of 45)	6.8% (3 out of 45)	36.4% (16 out of 45)	38.6% (17 out of 45)	15.9% (7 out of 45)
Statement #3 Leads to achievement: Students at this school achieve high grades.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher		5% (1 out of 21)	30% (6 out of 21)	55% (11 out of 21)	10% (2 out of 21)
Student		9.7% (13 out of 134)	33.6% (45 out of 134)	35.1% (47 out of 134)	21.6% (29 out of 134)
Guardians		4.4% (2 out of 45)	17.8% (8 out of 45)	37.8% (17 out of 45)	40% (18 out of 45)

Statement #4 Enables choice: Students have choices about topics of study.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher	14.3% (3 out of 21)	4.8% (1 out of 21)	28.6% (6 out of 21)	38.1% (8 out of 21)	14.3% (3 out of 21)
Student	19.7% (26 out of 134)	18.2% (24 out of 134)	31.1% (41 out of 134)	26.5% (35 out of 134)	4.5% (6 out of 134)
Guardian	6.7% (3 out of 45)	13.3% (6 out of 45)	33.3% (15 out of 45)	28.9% (13 out of 45)	17.8% (8 out of 45)

Category #3: Emotional Engagement Statements					
Statement #1 Frustration level: Students become frustrated while working through their lessons.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher		4.8% (1 out of 21)	47.6% (10 out of 21)	42.9% (9 out of 21)	4.8% (1 out of 21)
Student	10.4% (14 out of 134)	26.9% (36 out of 134)	28.4% (38 out of 134)	20.1% (27 out of 134)	14.2% (19 out of 134)
Guardians	17.8% (8 out of 45)	33.3% (15 out of 45)	24.4% (11 out of 45)	13.3% (6 out of 45)	11.1% (5 out of 45)
Statement #2 Online: Students are able to work with the online curriculum without frustration.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher	4.8% (1 out of 21)	42.9% (9 out of 21)	19% (4 out of 21)	28.6% (6 out of 21)	4.8% (1 out of 21)
Student	9.8% (13 out of 134)	21.2% (28 out of 134)	32.6% (43 out of 134)	23.5% (31 out of 134)	12.9% (17 out of 134)
Guardians	11.1% (5 out of 45)	11.1 % (5 out of 45)	24.4% (11 out of 45)	33.3% (15 out of 45)	20% (9 out of 45)
Statement #3 In person: Students are able to work with the offline curriculum without frustration.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher	4.8% (1 out of 21)	19% (4 out of 21)	9.5% (2 out of 21)	52.4% (11 out of 21)	14.3% (3 out of 21)
Student	7.8% (10 out of 134)	13.3% (17 out of 134)	34.1% (44 out of 134)	25.6% (33 out of 134)	19.4% (25 out of 134)
Guardians	4.5% (2 out of 45)	4.5% (2 out of 45)	22.7% (10 out of 45)	38.6% (17 out of 45)	29.5% (13 out of 45)

Statement #4 Range of emotions: The curriculum inspires positive emotions in students.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher		4.8% (1 out of 21)	66.7% (14 out of 21)	28.6% (6 out of 21)	
Student	25.4% (34 out of 134)	26.9% (36 out of 134)	38.1% (51 out of 134)	9% (12 out of 134)	0.7% (1 out of 134)
Guardian	4.4% (2 out of 45)	6.7% (3 out of 45)	33.3% (15 out of 45)	40% (18 out of 45)	15.6% (7 out of 45)

Category #4: Social Engagement Statements					
Statement #1 Peer-peer interaction: Students interact regularly with each other to learn.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher			28.6% (6 out of 21)	57.1% (12 out of 21)	14.3% (3 out of 21)
Student	6.1% (8 out of 134)	15.2% (20 out of 134)	28.8% (38 out of 134)	29.5% (39 out of 134)	20.5% (27 out of 134)
Guardians	4.4% (2 out of 45)	22.2% (10 out of 45)	15.6% (7 out of 45)	31.1% (14 out of 45)	26.7% (12 out of 45)
Statement #2 Peer-teacher interaction: Teachers interact regularly with students to support learning.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher			9.5% (2 out of 21)	47.6% (10 out of 21)	42.9% (9 out of 21)
Student	3% (4 out of 134)	10.6% (14 out of 134)	27.3% (36 out of 134)	38.6% (51 out of 134)	20.5% (27 out of 134)
Guardians	2.2% (1 out of 45)	6.7% (3 out of 45)	11.1% (5 out of 45)	51.1% (23 out of 45)	28.9% (13 out of 45)
Statement #3 Supportive of friendships: Students interact regularly with each other as friends.					
	1 (not at all)	**2**	**3**	**4**	**5 (extremely likely)**
Teacher			23.8% (5 out of 21)	47.6% (10 out of 21)	28.6% (6 out of 21)
Student	3% (4 out of 134)	4.5% (6 out of 134)	10.4% (14 out of 134)	26.9% (36 out of 134)	55.2% (74 out of 134)
Guardians	4.4% (2 out of 45)	6.7% (3 out of 45)	13.3% (6 out of 45)	33.3% (15 out of 45)	42.2% (19 out of 45)