

New Schools, New Directions

Approaches to Online/Blended Learning



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Abstract

The AVI CHAI Foundation developed a funding initiative designed to incubate new low tuition Jewish day schools built on a blended learning model. AVI CHAI's goal in setting out to do this work was to provide proof points for the model's viability as well as its potential to influence established schools. This report, an analysis of this effort, focuses on three new schools funded by the foundation. The schools reflect a range of grade levels, affiliations, and educational design models. When selected, all were beginning to put their plans into action. These schools were observed two to three times a year over a three-year period with the pseudonyms Darom, Zafon, and Mizrah .

Darom offered grades 7-12 in a flex model (learning in a brick-and-mortar space with teachers present where online learning provides students with a personalized and fluid schedule). Zafon is an Orthodox elementary school (grades pre-K-4, building to grade 8) with a classroom station-rotation model where students rotate between learning modalities, at least one of which is online learning. Mizrah was an Orthodox secondary school for girls (grades 7-12), which was envisioned as a boutique lab school pulling from different blended learning models centered around the expedition: a year-long, whole school interdisciplinary research project leading to an end-product benefiting society in some way.

The report offers lessons learned from the experiences of these schools. These include: 1) the importance and necessity of building in time for planning efforts before the school opens; 2) while finding teachers was easier than anticipated, changing how teachers would teach to fit the blended learning context was still difficult; 3) blending in a dual curriculum day school is doubly challenging; and 4) starting a new school is exhausting and exhilarating – culminating in the fact that, in the risky business of starting new schools, some will need strategies and support for closing down.

The report closes with some opportunities suggested by these cases, including the potential benefits for special education; containing costs without constraining learning opportunities; and networking school leaders for collective advantage and collegial support.

Background

In the fall of 2010, The AVI CHAI Foundation began its work in a “new area”—the field of online/blended learning—as a way to help move the field of day schools toward two distinctive but complementary goals: “1) to improve the quality of education by increasing individualized instruction and enabling students to develop skills and ways of thinking needed in the 21st century, and 2) to bring down the cost of day school education.” One key, and ambitious, line of work within this broader initiative was an investment “to incubate new schools that will start with a low tuition and high quality education proposition based on blended learning, serving as proof points and a disruptive force to influence established schools” (internal document, September 2012).

This report focuses on the strategy of starting new schools, and in particular on the experiences of three of the new schools that The AVI CHAI Foundation has supported. It draws on data from a larger study of an AVI CHAI initiative, in which a team of researchers from New York University’s Institute for Education and Social Policy followed the experiences, challenges, and progress of more than 30 day schools, both established and new, that have received various amounts of funding to introduce and implement online/blended learning. Within that study, we selected three new schools for more intensive fieldwork, not as exemplars of best practice (indeed, they had not yet established their practices), but rather to reflect a range of grade levels (elementary to high schools), affiliation (pluralistic to Orthodox), and distinctive design models (station rotation to flex, as described below). Moreover, while the Foundation has supported other new schools, our analysis of these three could start from the beginning, since they were just moving forward to put plans into action. Over a three-year period, we visited each school two to three times a year, usually for two days. We observed classes across grade levels and subjects, interviewed teachers and administrators, and gathered materials such as recruiting brochures, enrollment data, financial plans and reports, and lesson materials. Across the sites, staffs were gracious about spending considerable time with us, generous in sharing their experiences and insights, and eager to offer help to colleagues in other schools undertaking or considering similar work.

To provide a larger context for understanding that work, this report begins by offering a brief overview of research on the

general strategy of starting new, and potentially disruptive, schools, with attention to both the rewards and the risks of such an undertaking. The next section focuses on the particular efforts of the Foundation, including information on both where and how their investments in new schools were made. Section three offers brief profiles of the three focus schools, while the final section takes a more systematic look across all schools in the study, identifying key lessons learned in the process of starting, operating, and (in two cases) closing new schools.

The Strategy of Starting New Schools

In one of the most widely cited reports on the topic of online/blended learning, researchers from the Christensen Institute distinguish between “sustaining innovations” (which bring improvements or increased efficiencies into existing organizations), and “disruptive innovations” (which design a new model, offer benefits according to new criteria, and reach out to new “consumers”). They conclude that “philanthropists and foundations, for example, will likely want to invest in some mix of both sustaining innovations that will have immediate impact today, as well as push the disruptive innovations that have the potential to pave the way for a student-centric education system tomorrow” (Christensen, Horn, & Staker 2013, p. 39).

In recommending “disruptive investments,” the article points to the potential for high returns. While bringing about change in the technical core of teaching and learning in established schools is notoriously slow and difficult, new schools provide the possibility of purposeful design to take advantage of new technologies, offering greater individualization and student

agency, more customization and differentiation, increased access to learning opportunities beyond existing “geographic and economic barriers,” and potentially “a significantly less expensive system” (Christensen, Horn, & Staker 2013, p. 41).

Across the country, many innovators and investors have begun to explore the possibilities afforded by new technology to create new models for what a 21st century school could be. Some have created virtual charter schools, or state-sponsored virtual high schools, where online instruction is available to students who rarely, if ever, come together in brick-and-mortar buildings. By 2014, according to a study by the National Education Policy Center, 447 such schools had been started in 33 states across the country, serving more than 250,000 students (Miron & Gulosino, 2016).

Others have created blended learning, or hybrid, models, defined by the Christensen Institute as a “formal education program in which a student learns: 1) at least in part through online learning, with some element of student control over time, place, path and/or pace; 2) at least in part in a supervised brick-and-mortar location away from home; 3) and the modalities along each student’s learning path within a course or subject are connected to provide an integrated learning experience” (<http://www.christenseninstitute.org/blended-learning-definitions-and-models/>). While some of these new ventures are state or district operated, the majority are independent or charter schools (Miron & Gulosino, 2016). The Silicon Schools Fund, for example, created a venture capital fund raising \$25 million to award start-up grants of \$700,000 for up to 25 new blended schools in California.

Recently there has been considerable publicity for what are called “tiny schools,” or “micro-schools,” similar in structure to 19th century one-room schoolhouses, but with 21st century tools. Blending ‘high tech’ online resources with ‘high touch’ personalized mentoring, these new models are often located in Silicon Valley, launched by leaders in the tech industry sector looking for not only radically different learning environments, but also opportunities for research and development in educational technology, supported with considerable financial backing. For example, after investing \$100 million in Newark district school reform, Facebook’s Mark Zuckerberg led a fundraising effort to invest \$100 million in AltSchool, a software-driven micro-school network that now has six sites for its 200 students

(at a tuition of \$21,000). Elon Musk, a billionaire entrepreneur, bought a California mansion, hired three teachers, and began his own micro-school, Ad Astra, for 20 children (including his own). Salman Khan, after considerable success with Khan Academy, an online alternative site for learning, gathered more than \$1 million in funding to start his own Lab School, hiring two teachers and enrolling 30 students, including his son (at \$22,000 tuition). As Khan told a journalist, “Everyone will tell you that starting a school’s a crazy thing, don’t even try. And we were like, ‘well, let’s at least try’” (*Wired Magazine*, 26 Oct. 2015).

While not suggesting that starting a school is a crazy thing, the Christensen Institute researchers do acknowledge that it is a high-risk investment: “In its infancy, a disruptive innovation’s performance tends to be unreliable with significant variability. This appears to have held true in education. Some disruptive blended learning models are outstanding; others are far from it” (Christensen, Horn, & Staker 2013, p. 40).

Just how far from outstanding some fully online schools might be came as “sobering” news to the Walton Family Foundation, which had invested \$500,000 in virtual charter schools, while commissioning studies to evaluate their progress (Sternberg & Holley, 2016). They reported “stark” findings from Stanford’s Center for Research on Education Outcomes, comparing outcomes to matched students in traditional schools: “Students in virtual charters learned the equivalent of 180 fewer days in math and 72 fewer days in reading.” That study led to the Foundation’s public statement of the need to “rethink online learning” and shift their own investment strategy toward more careful vetting, and the more “promis[ing]” blended models (<http://www.edweek.org/ew/articles/2016/01/27/walton-family-foundation-we-must-rethink-online.html>).

For new schools with blended models, while the risk of becoming “far from outstanding” is very real, the greater risk is not becoming, or surviving as, a school at all. In addition to the challenge of developing online learning opportunities, they need to set up a brick-and-mortar site, which is itself a considerable challenge. Developing a design, raising funds, finding space, recruiting faculty, and attracting students all require a considerable amount of energy and expertise. Beyond those broad needs, after several studies of start up schools, researchers at the Center on Reinventing Public Education (CRPE) developed a daunting “basic list of skills and expertise it takes

to start a new school” including: 1) curriculum; 2) instructional services; 3) evaluation; 4) special education; 5) law; 6) accounting; 7) personnel; 8) insurance; 9) real estate; 10) construction; 11) building codes; 12) public relations; 13) governance; and 14) meeting facilitation (Lake, Winger, Petty, 2002).

The length and breadth of that list help to explain a CRPE finding that about 15% of new charter schools close in early stages, 7% in their first year, most often due to lack of access to resources and technical expertise, sufficient start-up financing, time and space for planning, and access to others with founding experience (Winger, 2000). Looking at Department of Education statistics, the Center for Media and Democracy (2015) found that while the number of charter schools in the US increased from 1,500 to 6,100 between 2001 and 2013, approximately 2,500 closed, most in their first year. In Michigan, despite \$5.4 million in planning and implementation grants, 25 schools never even opened. Moreover, of 15 new blended learning charter schools studied by CRPE researchers, 12 failed to meet initial enrollment targets (Miller et al., 2016). Advocating for new blended models and disruptive change, organizers at 4.0 Schools (<http://4pt0.org/>) launched a new program encouraging entrepreneurs to design tiny schools, providing planning time, space, toolkits, and weekend workshops with consultants offering expertise in business (including marketing), technology, and education. They also offered start-up funding and continuing assistance to those deemed ready to launch, expecting that 75% would “come to life”—as a school—which assumes 25% would not, even with that substantial support.

Looking at both charter and district public schools, they identified a paradoxical “mindset challenge”: reform advocates demand new and different results from schools, particularly high schools; families and educators simultaneously expect and demand to see the familiar and traditional structures and practices firmly in place.

Moreover, researchers studying efforts to scale up new school designs identified an additional risk, a “double-bind” that arises not from management weakness but from innovative strength.

Looking at both charter and district public schools, they identified a paradoxical “mindset challenge”: reform advocates demand new and different results from schools, particularly high schools; families and educators simultaneously expect and demand to see the familiar and traditional structures and practices firmly in place. In fact, the researchers suggest, “the further a design strays from traditional expectations about what school is and how it works, the more it incurs a penalty for being different. This is a deeply ironic challenge when difference is needed” (McDonald, Klein, & Riordan, 2009, p. 94). This bias is also a widely experienced challenge for new schools using the new and quite different structures and practices of blended learning—yet simultaneously needing to reassure prospective families that traditional expectations will be met.

These studies suggest that while the potential rewards of starting new disruptive models of schooling may be high, so too are the risks. As Christensen Institute researchers conclude in recommending a mix of sustaining and disruptive investments, while “fast failure in the search of successful innovation may be vital to improving schools, it is understandable that many are hesitant to prototype quickly these new models” (Christensen, Horn, & Staker 2013, p. 40).

The AVI CHAI Foundation Initiative

The AVI CHAI Foundation has not been “hesitant” in exploring and supporting the potential for new and disruptive models of day schools. Indeed, the initiative for blended and online learning reflects just the kind of “mix” that the Institute’s researchers suggest. Supports for sustaining innovations, or what the foundation staff call “evolutionary” change efforts, include small grants encouraging established day schools to adopt online courses or introduce blended learning into some classrooms, as well as advocacy efforts and technical assistance through the Digital Learning Network. More disruptive innovations, or “revolutionary” change, took the form of investments in new schools starting up and in the BOLD program for five existing schools, with blended learning as a key feature in creating new models of what the day school of the 21st century might be. A third prong stimulates the development of Judaic studies offerings online at both the middle and high school level. (See figure on page 6 for a full picture of the foundation’s online/blended learning strategy.)

Online/Blended Learning



As the Foundation staff began this work, an early memo indicated that they foresaw the potential reward in encouraging “the disruptive force” of new models: “The field needs those successes to show what online learning can ideally offer the day school field.” Moreover, the three new schools¹ that were selected for focused study out of five schools that AVI CHAI supported explicitly declared their disruptive intentions and ambitions for blended learning on their websites:

- *Darom Learning Center* “introduces the revolutionary re-invention of the full-day Jewish high school.”

- *Zafon* “is re-envisioning the Jewish day school classroom to incorporate 21st century educational approaches” and “offers a new model for the day school of the future.”
- *Mizrah* “invite[s] you to partner with us in reinvigorating the Jewish people through revolutionizing Jewish education.”

At the same time, even before most of the reports cited above had been published, staff also recognized the risks: “even in the best case, we expect that only some of these schools will succeed” (internal memo). To reduce that risk, the staff went through a “vetting process,” looking for promise in both educational quality and financial feasibility. They provided planning grants, giving candidates time to develop designs, and they funded (and sometimes helped find) consultants to work with founders in areas where skills and expertise were needed, such as in planning, financial modelling, or strategic marketing. Crucially, and unusually, they awarded grants for start-up operations. After those initial grants, further support was contingent on evidence of progress: schools were asked to submit educational and financial plans, progress reports, financial narratives, forecasts, and adjustments along the way². Through this process, the foundation awarded “incubation” grants to the three focus schools as shown below.

Table 1: New Schools Funding

School	Darom	Zafon	Mizrah
Grades	7-12	Pre-K-4 (building to 8)	7-12
Years Funded	2010-2014	2011-2015	2012-2015
Planning	Curriculum Plan \$50,000	With Consult \$50,000	With Consultation \$25,000 \$25,000 in Yr1
Yr 1 Op	\$150,000	\$150,000	\$115,000
Yr 2 Op	\$150,000	\$150,000	\$98,982
Yr 3 Op	\$150,000	\$0	\$80,091
Additional	Admissions/Marketing \$25,500 Consult	Board Coaching \$40,000	Governance Academy \$17,500 Admissions/Marketing Consult \$17,500
Total	\$525,500.00	\$390,000.00	\$379,073

¹ Conforming to norms of academic research for confidentiality, we have used pseudonyms for all individual schools and staff. This is primarily a matter of research ethics—the intent to protect the privacy of participants. It is also a reflection of the nature of a case study, which is based on purposeful study and constructed from the researchers’ perspective—the acknowledgement that it can only tell part of the story of a real school.

² Although funds in the table are listed by year, the money was not always (or even most often) distributed as a lump sum. A school receiving \$150,000 in one year, for example, actually received \$85,000 in August, \$40,000 in February, \$20,000 in May, and a final \$5,000 in July contingent on meeting individual milestones.

The New School Profiles

The new schools AVI CHAI supported have much in common as new schools, and share the challenges common to all new schools: needing to design models, devise programs and schedules, develop financial plans, and set up facilities, as well as to recruit and support faculty, staff, and sufficient numbers of new students. Together they offer the possibility of testing whether blended learning can be implemented immediately at school-wide scale rather than classroom-by-classroom and incrementally. Moreover, they are directly testing the possibility that online/blended learning can enable day schools to become significantly more affordable, operating at considerably lower costs, and with substantially lower tuition.

Yet each is distinctively different. There is considerable variation, since grants were not issued to support a particular model of blended learning, nor restricted to particular geographic area, grade levels, or affiliation. Each school exhibits unique strengths, engages different challenges, and has designed its own distinctive model for what a 21st century day school using online/blended learning might be. This section gives a profile of each of the three selected schools, providing a brief description of its 1) mission and design; 2) educational program and practice; 3) financial structure; and 4) overall progress and status at the conclusion of this study in June 2015.

Darom Learning Center

Mission and Design

Darom was the first of the new schools supported by The AVI CHAI Foundation to open, in the fall of 2011. The founding Director described it as a “revolutionary re-invention of the full-day Jewish high school,” with aims to become “the Amazon of high schools.” While that was a particularly apt metaphor for someone whose background was in publishing, it was their own family’s experience, and frustrations, with Jewish education that drove the founders to create a new school. The Director described searching among existing options as a Goldilocks-like tale: day schools provided a solid foundation of Jewish learning, but too little academic rigor and flexibility, with too high tuition; home schooling offered rich and affordable academic resources online, but too little Jewish identity and community, and too few of the social interactions that adolescents need. So together with a few friends, they set out to “question every aspect of secondary education: can it be done better? and cheaper?” and to create an alternative that would be “just right” for their own family and for families across the country. Even its name signaled their radical intention to create a different kind of educational opportunity: they called Darom a ‘learning center,’ rather than a school. Echoing the quote from Salman Khan, cited above, she said “we were ready to do it, and probably the only people crazy enough to do it.”

Darom’s founders designed their model to build on the strengths of home schooling’s individualized online learning pathways housed in a common space that would be “comfortable,” or even “camp-like.” This design most closely fits what is classified in the Christensen Institute typology of blended learning models as a *flex model*: learning takes place primarily in a brick-and-mortar space, with teachers physically present, but “online learning is the backbone” through which students have an “individually customized, fluid schedule” (Christensen, Horn, & Staker 2013, p. 28).

The design followed the flex model structure more closely in general studies, with curriculum and instruction brought in through a wide array of online providers, supported by a

part-time staff they initially referred to as “coaches,” “mentors,” or “tutors” rather than teachers. Even more customized and independent opportunities were included through what they called “mini-mesters”—two week periods where students would follow their own interests into independent research projects or real world internships in diverse fields such as publishing, midwife practice, and science labs.

For Jewish studies, however, at that time they did not find online offerings to be comparable, in either quantity or quality. With their planning grant from the Foundation, the founders worked with two rabbis and a learning specialist to develop a pluralistic curriculum, culminating in what they called “the book”—a document of almost 100 pages. That book outlined a “connected, holistic, and consistent” program built around a “permeable core:” courses in *Talmud*, *Halacha*, *Chumash*, and *Nach* would connect the study of Bible and commentaries, Jewish laws and rituals, Torah, and Prophets and Writings, and extend into individual student and group projects to accommodate varied interests and skill levels. It called for teachers to play a somewhat more traditional role and “deliver the curriculum,” although since they would be part time, students would do much of their learning together in “*chavruta* and *chavurah*” (pairs and small groups).

This design, they hoped, would provide an attractive opportunity for local families “priced out” of traditional day schools or unsatisfied by home schooling, and offer an “open source” model for others across the country seeking to develop new possibilities for affordable 21st century Jewish education.

Educational Program and Practice

To provide their flex model, with personalized pathways tailored to individual student needs, the Director and staff experimented with a long list of online options: ALEKS, Connections Academy, Engrade, Haiku, Keystone, Khan Academy, Moodle, Rosetta Stone, Stanford Online High School, Thinkwell, YouTube, Virtual High School, and others. That wide and frequently changing array allowed for 20 students to enroll in 42 different “classes,” including courses even a large

traditional high school could not easily offer, such as coding, financial literacy, and history of science.

“It seems obvious now, you can’t do the blend without the teacher.”

To match students with options suiting their needs and interests, and to make sure they were making progress and meeting college requirements, Darom employed a fairly large, but very part-time staff. The administrative side team, that included the Director (the only full-time person), an assistant director, a coach/counselor, and two clerical support staff, all of whom worked limited hours but took on multiple responsibilities. With their location just outside of a large metropolitan area, the Director reported that there was an “endless pool of part-time teachers,” making it relatively easy to “find people who are competent at content.” Among the 14 they hired, three had doctoral degrees, two had Rabbinic ordination, and six had master’s degrees, and almost all had prior experience in teaching. Content knowledge needed to be not only deep but broad, since any ‘class’ might include students taking different courses, working in the same room but needing support in different areas: Math class, for example, included Algebra I, II, and Geometry, while science had students simultaneously taking Earth Science, Biology, and Chemistry. Teachers would serve in a support role as needed, more like a tutor.

Darom’s flex model allowed for considerable variation in staff schedules: one teacher came on site for an hour and a half, five days a week; another for two-hour blocks on two days; a third for 40 minutes, three days. Still another, who preferred to teach from home, met her students online twice a week, and seldom came to campus at all. While several teachers, with young families or other jobs, reported this as an attractive feature, it also meant that there was little overlap in schedules, and few opportunities to build community or share collegial support apart from four scheduled faculty meetings each year, and a requirement for visits to another teacher’s classrooms once a month.

Moving from the design phase into implementation, Darom’s educational practice began to shift, to some degree, from the

original plan. In general studies, the Director reported, not all students were as “organized and motivated” as the design had assumed, and not all online providers offered the in-depth learning or hands-on application that students needed. As she observed, “it seems obvious now, you can’t do the blend without the teacher.” So while students did take most courses online, and many worked independently in the common room, teachers took on a more active instructional role during class time. In observations, for example, a Chemistry teacher began class saying “there’s really no reason for you to have your laptops out today,” and guided students through calculations to find molar mass; a History teacher set up an activity for students to role-play officials at the Continental Congress, creating and negotiating the laws for a new government; and while Earth Science students tracked geothermal currents online in real time, Biology students used their time to do real dissections in a small teacher-led group. According to one teacher, “the role has evolved a lot. At the start, everyone had online courses; I was more tutoring and support.” By spring, she was designing courses using online resources and blending online instruction with her own. While prior teaching experience had not been a high priority for initial hiring decisions, its value quickly became apparent both to the Director and to the teachers themselves. As their roles expanded, teachers increasingly drew on established skills, and supplemented online learning with their own materials and activities, such as labs or role-play. One, who was quite happy taking on more active instruction and course design, explained that prior experience was an essential asset: “If I were a new teacher, I’d be dead in the water.” Other teachers agreed, saying they relied on prior skills even if they used them in new ways, and described the challenges of creating active and engaging lessons as a welcome change from the persistent pressures of content coverage and large lectures they had experienced in previous schools.

On the Jewish studies side, teaching roles shifted slightly as well—in the opposite direction, but toward what was becoming a more widely shared, and more blended, educational practice. While one initially described it as “the least blended of all the programs,” Jewish studies teachers began to introduce more of the online resources that students were becoming used to, and coming to expect. By the spring they were “beginning to blend,” and talked of experimenting with Aleph

Beta, eMishna, Lookstein Virtual Jewish Academy, Virtual Beit Midrash, YouTube, and Web Yeshiva. One teacher used an Aleph Beta video in what she described as “one of the most exciting classes I’ve ever taught:” it “took us places that a regular teacher wouldn’t have,” since students questioned the virtual teacher’s commentary in ways they “wouldn’t have had the audacity to ask a teacher in person.” Another showed YouTube videos of Purim *shpiels*, and reported that students took the task of creating and performing their own skits more seriously when they decided to record and post them for a wider audience. In another project, students used computers to research, and then produce, an online guide—in Hebrew—for first time visitors to Jerusalem. Blended learning became part of the curriculum itself in another class, as students did an entire unit on “how Jewish Law relates to technology,” exploring how to use the “internet in a more kosher way,” and what dress code rules would apply in virtual meetings. That issue became particularly relevant when repeated snow storms and school closings led Darom to experiment with “beam-in days,” in which students and staff came together in online chat rooms from their own homes.

In the structural sense, Darom remained, as originally planned, a flex model school offering personalized pathways where students could take many courses online, and where much of their time was spent working independently or in small groups. In supervised face-to-face time, they adapted the design slightly to provide more active instruction from teachers. As the Director explained, “It was always to be blended, but the definition has changed: from the teacher facilitating an online course, to the teacher teaching with many online elements.” By the end of the first year, that new definition had become Darom’s school-wide practice.

Financial Structure

Convinced of a “real need for affordable Jewish education,” and that too many families were being “priced out” by rising tuition, the founders described looking back to what they identified as the high point for day school enrollment, in the 1990s, and decided to set their tuition at what they determined to be about average at that time: \$5,000. That was a fraction of what neighboring day schools were charging, although for families

coming from public schools or from home schooling, it was still a considerable expense. Still, their original financial plan estimated that if they could raise \$800,000 of external funding to see them through the first five years, and if they could enroll 140 students over that time, they could become self-sustaining. Although the AVI CHAI incubation grants would not provide that level of funding, or promise that length of time, they decided to commit to that tuition point.

Enrolling that many students is a tremendous challenge, especially for a high school, for a school stressing new (and largely unproven) technology, and for a model very different from the familiar structure.

That decision put Darom under considerable pressure to keep costs down. In the five months between the funding approval and the school’s opening, they worked to bring together the basics for its operation. With a part-time staff working limited hours, salary expenses were low. Space became available when they located in an established day school that was closing due to declining enrollment; they rented part of its building, with three classrooms, two large rooms (a common room and Beit Midrash), and a small office—and with room to expand. They found furnishings second hand, from donations or Craig’s List, including not only small tables and desk chairs but also overstuffed couches and easy chairs that students could pull together when working in groups or push apart when working independently. Technology costs were kept to a minimum as they bought new routers for WiFi access, but brought in extensions cords and power strips rather than rewiring the rooms. Since students and staff would bring their own devices, they made little investment in hardware (under \$5,000 annually), and in choosing software for courses, program cost was consistently a key consideration. As the Director explained, “We’re good budgeters.”

There was considerable pressure on the income side of the budget as well, since to become self-sustaining at that tuition level, the school needed to enroll a large number of students in the short period of time before their incubation grants ran out. They estimated that to fully reach their “break-even

point,” they would need 140 students, and to get to that point would take at least five years. As the research cited above makes clear, enrolling that many students is a tremendous challenge for any new school, but especially for a high school, for a school stressing new (and largely unproven) technology, and for a model very different from the familiar structure. Darom’s design incorporated all of those increased risk factors. While they hoped to attract 25 to 30 students in 8th to 11th grades initially, in the first year they enrolled just 20. Somewhat surprisingly, since they had advertised Darom as a new kind of high school, half of those first students were 8th graders. The other half included one 11th grader, and four or five students in 9th and 10th, although, as one teacher noted, since several were coming from homeschooling, grade levels were “somewhat slippery.” More surprising to the staff, although perhaps not entirely unpredictable, was that families who did take the risk of enrolling in this new and different high school included several who had experienced academic or behavioral problems in more traditional sites, who arrived with what the Director described as “more serious learning needs than disclosed by their parents.”

Losing three of those students whose needs could not be met, and one for whom the commuting distance was too great, but attracting two new 10th graders, Darom enrolled just 18 students in year 2. Realizing that “it’s clear that a startup high school such as Darom requires more resources dedicated to recruitment that we have had,” the administrators (with a grant from The AVI CHAI Foundation) brought in a consultant to help with marketing and recruitment. With great reluctance, they confronted the possibility of raising tuition—but remained unconvinced that it would help enough. As the Director later explained:

We needed about \$300,000 each year, and we were far from that. . . . Tuition could have been higher, \$6,000. Then gradually go up to \$8,000. Then our break even would have been 70 students. But we were not even close enough to that, so in the end it didn’t matter. And even \$5,000 is difficult for some people, and we didn’t want to leave those people out.

Deciding that families of younger students were less “risk-averse” to trying a new kind of school, and that a middle school program would give them a “natural feeder path,” they

refocused recruitment efforts toward 7th and 8th graders, which the flex model made possible with few programmatic changes. To reassure high school families, they encouraged their first, and at that time only, senior to apply to several colleges; by spring they could proudly point to 12 acceptances from selective institutions.

Progress and Status

Year 3, the final year of our study, was also the last year with funding from The AVI CHAI Foundation. With 12 new students signing up, Darom reached an enrollment of 30 students, but that was still far below what they needed to break even. As the Director acknowledged, the school was “too small” and “growth was slower than we had hoped or expected.” With a strong educational program, but weak enrollment and financial base, they began the year still hopeful that—in time—the school could succeed: “I don’t know how long it will take, but once it catches on, it will catch.” But they were clearly running out of time.

In the fall, while running the school, administrators struggled to find new revenue to keep the school running. The Director reached out to foundations and donors, but as the Christensen Institute report suggested, she found none willing to invest operating funds for a new, different, and unproven model of disruptive education. Teachers said they were “surprised;” while they knew enrollment was low, the school finally seemed to be growing. Moreover, they reported being “proud,” seeing their work as extraordinarily successful at meeting student needs in innovative and effective ways, and of constructing a new possibility, even a “new paradigm” for what a 21st century day school could be. Indeed the educational model was bold and exciting: a deeply personalized educational experience where teachers with deep content knowledge guide individual students on their own learning journeys, including independent research projects and internships. Families demonstrated their commitment by launching a fundraising effort that raised almost \$100,000. But families attracted by the \$5,000 tuition had limited resources to contribute; as the Director reported, “Parents scratched up a lot, but not enough.” They were limited, too, in what they could contribute to recruitment efforts. If, as a study by Held (2013) argues, “75% of day school admission inquiries come from word of mouth or siblings and

only 8% from advertising” (p. 3), in a new school, with few students, there are not nearly enough mouths or siblings to get the word out. Positive stories about the cost and quality of the program did appear in local papers, and students promoted the school through a video they had produced and posted, but admission inquiries remained too low to suggest a reasonable chance of approaching the numbers they needed.

Starting a high school would likely take five to ten years rather than the three for which they had external funding.

By late spring it became clear that the school could not continue. The founders had known, the Director said, “rationally from the start, that it might not work, but we really didn’t let ourselves think that.” But at this point, they had to not only

think about it, but also talk to faculty and families about the decision to close the school. Staff held painful meetings with families, working to figure out options for each child: most would go to home schooling or public schools, a few to distant day schools, and they arranged to support juniors so they could homeschool or take community college classes for their last year but still graduate with a Darom diploma.

Looking back over the course of events, administrators did express some specific regrets: not investing enough time in planning for operations and recruitment; not spending a year fundraising before the school opened; not fully appreciating that starting a high school would likely take five to ten years rather than the three for which they had external funding. Overall, however, they had no regrets about their efforts, or what they had been able to accomplish in such a short time. As one concluded, “It was a really good experience. Kids got a lot out of it. They got three good years, so we did some good in the world.”

Zafon Elementary School

Mission and Design

Zafon Elementary School opened in the fall of 2012. The idea of creating this new school began with a small group of young professionals who volunteered their services to plan the educational and financial components necessary to launch. Looking at the potential of new technology uses in education, they decided that blended/online learning could offer a mechanism to reduce costs without reducing quality. Small meetings with local young families concerned about the high, and sometimes prohibitive, cost of Jewish day schools created interest in the new model—enough to convince a wealthy donor that there was a real need for an affordable but high-quality day school. While not as radical in their language as Darom's, Zafon's founders set goals as ambitious in scale: “re-envisioning the Jewish day school classroom to incorporate 21st century educational approaches” and developing “a new model for the day school of the future.” Successfully starting a new Orthodox elementary school, with blended/online learning at its core, would provide evidence that this idea could become a reality. Creating a strong model would provide a template for others throughout the day school field: new school founders could replicate the model, while existing schools could adapt it, introducing what the founders called new “efficiencies” to bring escalating costs down.

With a planning grant from The AVI CHAI Foundation, they spent a year working to develop a robust model. They brought together a design team, including an experienced day school educator they hired to become Head of School, a school psychologist with administrative experience and expertise in curriculum design, and consultants from an organization specializing in 21st century classroom design and operation. They also hosted a series of what they called “parlor meetings” or “salons:” neighborhood meetings to both gauge and galvanize community support, and even to begin recruiting and fundraising.

The resulting design called for an elementary school, eventually to include grades from pre-K to 8, but beginning with the early grades and “phasing-up” a new grade each year as

students, and the school, progressed. The phase-up strategy, common in school start-ups, offered several advantages: practically, it seemed easier to recruit younger students; politically, it avoided being seen as “poaching” students from other schools; pedagogically, each new grade would start with students already familiar with the model and routines. One disadvantage, at least in the first years, was that until the school included 6th grade it would be classified by the state as an early childhood program, requiring two adults per classroom and lower class size limits.

Creating a strong model would provide a template for others throughout the day school field: new school founders could replicate the model, while existing schools could adapt it.

For blended learning, they chose a classroom station-rotation model. In the Clayton Christensen Institute typology, this is defined as structured classrooms “in which students rotate on a fixed schedule or at the teacher’s discretion between learning modalities, at least one of which is online learning. Other modalities might include activities such as small-group or full-class instruction, group projects, individual tutoring, and pencil-and-paper assignments” (<http://www.christenseninstitute.org/blended-learning-definitions-and-models/>). While having a station of seven computers might be new and different, in many ways this resembles typical early childhood classrooms, with distinctive areas (“centers” or “stations”) where students move from wooden blocks to art activities to reading rugs, and its familiarity seemed reassuring to prospective parents. In addition, the design team used their planning year to set up guidelines for a range of core elements. They stressed, in particular, rotation stations (which would enable small group experiences within larger classes), and diagnostic data (which would enable learning tasks to be tailored to individual student needs), but also included instructional design, hiring procedures and professional development, evaluation of online products, and maintaining the priority of economic efficiencies. To give a

solid foundation to their mission, and to the school, the design team identified what they called the “three pillars” of learning at Zafon: (1) independent critical thinking skills, (2) collaborative skills, and (3) strong positive relationships with teachers. To house their design, they located and leased a site vacated by another elementary school, with classrooms, a lunchroom, two offices, a small playground and a large parking lot.

Educational Program and Practice

In the first two years, Zafon operated with an administrative staff consisting of the Head of School, a director of business/operations, and a school nurse/secretary. It was, they said, a “lean staff,” kept small in the interest of affordability. To keep the burden of being Head from becoming overwhelming, they experimented with distributed leadership: experienced teachers as mentors to more junior colleagues, teacher teams working together on grade-wide or subject-wide matters. They also designated an experienced teacher as “blended learning coordinator,” helping other teachers learn to use or adjust to the school’s blended learning system, and going to trainings to bring back information and ideas to share. As the school grew, administrative demands grew as well, so that position shifted to a half-time Curriculum Coordinator in year three, and the school added an experienced educator who was also a psychologist part-time (20%) to provide additional operations and teaching support. By the next year, the Head of School position had been divided between Rosh Yeshiva and Principal.

From the start, the design set formal requirements for teachers, almost all of whom would hold full-time positions: a Master’s degree and experience for lead teachers, a college degree for assistants, and fluency in Hebrew for all in Jewish studies. Like Darom’s, Zafon’s administrators reported “no shortage of [teacher] applicants” who met their criteria, at least on paper. But to assess what they saw as equally important qualifications, such as collaboration, attitude toward innovation, and versatility, they developed an elaborate screening process including interviews (“How do you feel about being videotaped and having the whole faculty watch it with you?”), a model lesson, and extensive conversations about comfort with the uncertainties of a new school. Giving credit to this process, the Head reported they only hired one teacher who “couldn’t adapt to our model.” Even so, teachers talked of being “kind of

shocked” by the changes in teaching demands, and of a “steep learning curve” in their first weeks. To strengthen induction, professional development, and fidelity to the model, teachers were expected to do “peer observations” in two other classrooms, and then compare notes in faculty meetings, discussing what they had seen, and what they might use. All staff reported this as a valuable use of their time, even though it was sometimes difficult to find the time to actually do it. Some time was structurally built into the schedule when three part-time teachers took students for ‘specials’ (art, music, or physical education) or, as the school grew larger, when a floating substitute could provide additional class coverage. In addition, the Head of School discovered—after considerable personal research—that the school could qualify for additional Special Needs services from the public school system. So at no cost to the school, occupational, behavioral, and speech therapists would visit once a week to observe classes and consult with teachers.

Once hired, Zafon’s first faculty invested considerable time and energy examining available software programs, ranking them on criteria such as ability to export data, a parent portal, gaming, and culturally/religiously appropriate avatars. As a teacher recalled, “One of the most important things we did was that research. I had thought maybe it was wasting time, but it saved so much time later on.” Initially they chose DreamBox and Compass Learning as primary providers for all grades in math and language arts, and TaL AM for Hebrew, along with supplementary programs like Brain Pop, or Reading A to Z. The second year they changed to i-Ready for reading. Had cost not been such a key factor, teachers said they would have preferred a greater range of offerings, to provide choices for different lessons, different students, or just to vary the format when students seemed bored. But using the same programs made comparing notes on practice easier, training more efficient, and costs lower.

The staff also spent a considerable amount of time talking about when technology is not useful. As a first grade teacher put it, “I’m not putting them on the computer to learn about community, or to learn values. That’s the human element.” The advantage of a blended learning model, teachers stressed, was that while computers added something “unique” for student learning and for fast and detailed data, they did not displace traditional teaching or student/teacher relationships. For one

experienced teacher, recruited from a day school with a wide reputation for high quality and high tuition, the key advantage of Zafon was that it allowed her to provide the same kind of education, but at a much lower price.

At their most effective, rotations provide students with varied modalities through which to interact with content, teachers and each other.

Learning to use the computer, and to work independently, added a third area to the traditional dual educational program of day schools: students need to learn not only the sound and shape of both “s” and *sin*, but also where and how to use it on a keyboard. Use of a keyboard and mouse, how to log in and save, how to click and drag, and what to do when a screen freezes are all skills that need to be taught. Some are taught directly; as a teacher explained, “Here we begin training at a really young age. Not just keyboard, but things like internet etiquette, safety, and filtering.” Other skills are learned more indirectly: in pre-K, for example, students putting together puzzles on the computer were learning to click and drag. Teaching young students how to log in was initially challenging, as students often forgot their passwords. Teachers shifted to writing the passwords on index cards, but those were often misplaced. Then one teacher came up with a solution: students log in with unique identifiers based on their own names, but all have the same password. Apart from rare instances where a student mistakenly logged in as someone with a similar name, that seemed to solve the problem, and became standard practice in all classrooms.

In addition, both teachers and students needed to learn the routines of rotation. By design, when the 80-minute rotation period begins, students divide into groups and move to their stations. The number and types of stations and activities can and does vary both from room to room and from day to day, but typically one group will work independently on computers and two will go to the desk areas with teachers for small group instruction or projects; after about 20 minutes, all rotate. As one teacher explained, at first “getting from station to station in between rotations was a big time waster. We got ideas from teachers, like countdowns or songs, but it

took a lot of effort. Time is really important in this model.” While each teacher chooses her own approach, *every* classroom observation in Year 3 saw rotations accomplished in less than two minutes—a significant reduction from the seven minutes observed the first year.

While our data show that the school mastered the station-rotation model as a structural element within the classroom, we want to remind readers that good teaching is not simply the implementation of classroom structures, procedures or policies. Nor is it simply the creation of a classroom community and culture that supports learning. At their most effective, rotations, like “centers” or the station rotation model provide students with varied modalities through which to interact with content, teachers and each other. The existence of stations well-implemented suggest that students’ classroom activities vary throughout a time period; however, stations do not tell us anything specific about the quality of teaching, only that the “teacher station” will allow the teacher to interact with a smaller group of students, rather than the full class.

To draw conclusions about teaching quality, we would have had to have done—at minimum—multiple and systematic classroom observations of multiple teachers over time. In addition to observing the classroom organization and culture, we would have been looking for evidence, for example, of such things as “pedagogical content knowledge” (Shulman, 1986; Shulman, 1987); or, as Charlotte Danielson has advanced, teacher questioning and discussion techniques, communication, ability to engage students, assessment use, and flexibility and responsiveness (<https://www.danielson-group.org/framework/>); or teacher ability to develop concepts, give quality feedback and model learning specific language, as Hamre and Pianta have outlined in their Classroom Assessment Scoring System (<http://curry.virginia.edu/research/centers/castl/class>). This was beyond the scope of our research; thus we make no specific claims here about educational quality within the classrooms.

Data use, the second of the primary features stressed in the original design, was more challenging for teachers, with a steeper “learning curve” than rotation. It was limited by the capacity of both the programs and the faculty. As one described it, she received “extremely detailed feedback, and it’s sometimes hard to sort through it.” Teachers in general

agreed that i-Ready gives them better and more user-friendly data than other programs; with support and initial training, all expressed comfort with using it. They reported two major advantages in improving their practice. First, data feedback is fast: reports are fine-grained enough that they can use them to quickly diagnose areas of strength and difficulty for individual students, where in previous schools they might have waited weeks for a learning specialist's assessment. Second, data reports are frequent, allowing them to group and regroup students on an ongoing basis. Instead of placing them in loosely leveled and labeled reading groups for weeks at a time, one explained, "It's different every day: sometimes by spelling, some by who is ahead in the work, some by social groupings; it changes all the time." Overall, however, we did not have enough data to assess the extent to which teachers were able to use data to change student groupings and modify curricular or pedagogic methods. It appears that over the course of the three years, teacher focus on using data decreased.

Financial Structure

Building a solid financial structure was not only a basic component of Zafon's operations, it was a primary goal of the founders: to create a convincing case that through blended learning and increased efficiencies a day school could operate, and become self-sustaining, at a considerably lower cost. By design, they set average tuition (it varies by grade) at \$8,600, with a commitment to increase it by no more than the rate of inflation (about 2%). While somewhat higher than Darom's, this was substantially (about 40%) below other day schools in Zafon's area, and even below per pupil cost of nearby public schools. Still, it was high enough that from the start they began a dedicated fundraising effort to provide \$20,000 for need-based scholarships.

The operations budget had to cover facility rental, utilities, insurance, salaries and benefits for full-time faculty and staff. In addition, as a blended elementary school, the model called for purchasing not only furniture, books, art, and paper supplies but seven or eight Dell desktop computers for each classroom, as well as headphones for each student and a mouse small enough to fit a four-year-old's hand (which the Head noted took "a deep dive searching" to find). Looking to increase efficiencies and keep costs down, teachers talked of

bringing in their own books, or making good use of the nearby public library—but they also found ways to bring in equipment for science projects such as an incubator the pre-school could use for hatching and observing baby chicks.

Even with start up grants from The AVI CHAI Foundation and from the other donor that provided support, the administration knew from the start that the school's survival depended on the challenging task of meeting enrollment targets. Despite the considerable time spent in the planning year, the engagement with potential families at their 'salons,' and positive stories appearing in local papers, they began enrolling uncertain of the outcome, and several talked of being "surprised" at how many families signed up. As one proud staff member reported, "This is a brand new school; many have not been able to do that. We expected 50, and got 116." The Director of Business, also somewhat "surprised" by enrollment numbers, gave credit to the attractiveness of Zafon's model: "the lower tuition, the blended part. It was the best of both worlds." Breaking it down a bit further, she explained, "one third are coming for the price, one third for the model, and one third just like us."

With an opening enrollment of 116 students in grades pre-K through 1st grade, Zafon's first annual report showed average tuition at \$8,600, while per pupil spending was \$11,900, leaving a \$3,300 per student "gap." In Year 2, enrollment grew to 162 students (pre-K through 2nd grade), and in Year 3, 182 (pre-K through 3rd grade). With firm class size limits, and without the flexibility of multi-age groupings that Darom had, Zafon even had waiting lists for some grades. At the same time, by year 2, even with additional teachers and a slightly larger administrative team, economies of scale and increasing efficiencies were bringing cost per student down and shrinking that gap. By Year 3, the annual report showed that 94% of operating expenses were covered by tuition revenues, well above the percentages commonly reported for day schools (Prager, 2005; Held, 2013). The trajectory toward their goal of becoming financially self-sustaining seemed almost within reach.

Progress and Status

Enrollment growth meant that Zafon was rapidly approaching the limits of what their first facility could accommodate. By the end of our study, they were facing what the business

manager called “the kind of problem you like to have.” To be sure, the school had certain contextual advantages that most new schools do not; namely, it opened in a market flush with committed Jewish day school families, so recruiting students was not the challenge it would be in many communities. And recruiting first for preschool and the lower grades mitigated the risk that many families are not willing to take for their middle school and certainly for their high school aged students. In addition, the school was able to contain costs by opening in a building with low capital costs, relying on parent volunteers to assume non-teaching responsibilities, and relying on teachers to assume administrative responsibilities. A new building, additional school leadership personnel and a more professionalized staff will likely change the financial model.

Administrators remained committed to the station-rotation model in general, to data-driven personalized instruction in particular, and to the “three pillars” on which the model rests: critical thinking, collaborative skills, and strong relationships between students and teachers.

With the support of both the same donor that helped the school at its start and their student families, Zafon undertook a capital campaign. It began negotiations to purchase a building large enough to fully house a pre-K-8 school, and with flexible space to allow for renovations suited to a fully blended learning school. That substantial investment meant, as the Business Director acknowledged, “We will not break even next year, though we think the year after. Though there are so many unknowns, especially when dealing with construction.”

While they might be uncertain about construction schedules and financial implications, at the end of Year 3, Zafon’s faculty and administrative staff were increasingly certain that they were on the right track toward creating a school that met

their expectations of what a blended learning school could be. Teachers were enthusiastic about what technology adds to their classrooms, and reassured that it does not displace what they see as the essential “human” side of teaching. The model gave them a structure and a framework to build on, and while the learning curve was steep, they appreciated the data they could “leverage” for student learning, and the personalized attention they could give in small groups, even in larger classes.

Administrators remained committed to the station-rotation model in general, to data-driven personalized instruction in particular, and to the “three pillars” on which the model rests: critical thinking, collaborative skills, and strong relationships between students and teachers. Only halfway to becoming the pre-K-8 station rotation day school that the founders designed, they recognized that new challenges await, not only in designing a new building but also in designing programs for upper elementary grades. While their stations and software have worked well for literacy and numeracy skills, planning teams were working on how to extend the model to fit the increasing curricular demands of individual academic subjects, to find resources for more advanced Hebrew, and to push beyond what Resnick (2002) calls the “information-centric” format of digital resources to create richer opportunities to support the school goal of providing 21st century learning. Still, looking back at Zafon’s overall progress, the Head concluded, “We’ve accomplished a lot, and I’m even more confident now than I was before that we have tremendous opportunities; to differentiate learning, to have it be personalized as well as cost-effective.”

For more information on Zafon, see two longer case studies of Zafon, “A Station-Rotation Model for Supporting 21st Century Learning” (http://avichai.org/knowledge_base/zafon-elementary-school-a-station-rotation-model-for-supporting-21st-century-learning/) and “Growing the Station-Rotation Model in Year 3” (http://avichai.org/knowledge_base/zafon-elementary-school-growing-the-station-rotation-model-in-year-3/), available on The AVI CHAI Foundation website.

The Mizrah School

Mission and Design

The Mizrah School opened in 2012 as a very small Orthodox secondary school for girls. The idea for the school began with two women who shared longstanding interest in the field of education, and a desire to create new ways of preparing young women for life and leadership in the 21st century. Though neither had experience as a school administrator, one brought a strong background in arts education, the other in youth development. They were inspired by the ideas of progressive education, and its new iterations in project-based, experiential, or expeditionary learning and the maker movement, which all aim to shift the role of students from consumers to producers of knowledge, and of teachers “from conveyers of knowledge to facilitators of the knowledge-building process” (Ready, Meier, Horton, Mineo & Ysaitis, 2013, p. 4). Yet they saw few opportunities for that kind of innovation in traditional day schools (see <http://ideaschoolsnetwork.com/the-maker-movement-in-jewish-education/>). In home schooling, they saw families exploring individualized, interdisciplinary pathways and creative projects in arts and sciences, but struggling with how to ensure strong academic preparation and afford the social experiences they saw as particularly important for adolescent girls. Moreover, for families who were, as they described themselves, *ba'alei teshuva*, or ‘returning’ to Orthodox traditions after more secular lifestyles, home schooling could not satisfy the desire for immersion in Jewish content, identity, and community. Their mission, a co-director explained, became to “do something that doesn’t exist,” to construct a “triple curriculum: the Judaic, the secular, and the 21st century skills,” and to embody that curriculum in what they called “the maker mentality.”

With funding from a local philanthropic group, they began a pilot program in the 2010-2011 school year, bringing a small group of homeschooled girls to learn together two days a week, and giving themselves the chance to “pioneer the design and implementation of project-based education in an Orthodox middle school setting so that its benefits and challenges could be better understood before launching the school” (internal documents). Over the year, they worked to develop a design

that would be project-based and Torah-centered, highly rigorous and deeply religious, and that could accommodate individual differences in styles and skills by offering multi-age classes with individualized learning plans for each student. The planning team believed strongly in the benefits (both academic and social) of single-sex schooling, and of having accomplished female teachers as powerful role models for students who they envisioned as leaders of the next generation of Jewish women. With small grants from local foundations, they were able to draw on outside expertise to help with the planning: a business advisor to help create a financial plan, a learning design consultant to develop curriculum, and a university hosting a workshop series on 21st century/blended learning. In their discussions, the founders emphasized that online learning was central to *how* they would do things, as a tool for hands-on experience and real-world application, but stressed that technology itself was never their goal: “We do value the technology, as another set of tools. We do not want to get rid of books; we want to make books.”

Like the tiny schools founders described in the literature above, they envisioned Mizrah as a “lab school” or a “boutique school;” while it might directly serve only a “small niche” of families in the Orthodox community who wanted a very different kind of education for girls, they could develop new methodologies for later use across the field. The most distinctive methodology, and the feature they spent most the time planning and piloting, was the expedition: a year-long, whole school interdisciplinary research project leading to an end-product which was “real” and benefits society in some way. In many ways they drew from work in innovative public schools, using Outward Bound or expeditionary learning frameworks (see <http://eleducation.org>), but in Mizrah’s design each year’s expedition would be closely connected to a particular Torah lesson. In addition, every course would include project-based components, and deliberately build connections across subjects and between inside and outside of school. Rather than having the “silo system” of the traditional dual curriculum, one Director described their intent to “blur, to synthesize . . . to not even think of them as separate;” and an English teacher confirmed that “the borders here are very fluid.” To assess projects

and student learning, they began to plan for competency-based assessments and the creation of “digital badges” earned by demonstrated mastery of understanding or skills.

“We are talking to ourselves about being thoughtfully blended. And about being something unique, because of our emphasis on hands-on learning.”

The design called for Mizrah to open with 6th to 9th graders, and, like Zafon, to phase up, adding a new grade each year. Classes would use multi-age groupings, giving flexibility to adapt to individual interests and needs, as well as enrollment variations. They expected to draw students, as their pilot had, from the home schooling market, and set tuition at what they believed would be an affordable rate of \$12,000, about half of what other day schools in the region were charging. In this way, Mizrah reflects the Christensen Institute’s ideal of blended learning as disruptive innovation: “one that replaces the original complicated, expensive product with something that is so much more affordable and simple that a new population of customers . . . has enough money and skills to buy and use the product” (Christensen, Horn, & Staker, 2013, p. 12). Home schooling families, previously non-consumers, would be drawn into Jewish education in a school setting, and potentially disrupt traditional day school structures and practices in the process.

Their design did not, however, fit any singular model of blended learning in the Institute’s typology. Instead, they talked of using “different models for different coursework,” including station rotation, flex, flipped classrooms and a la carte. As one Director clarified, “I don’t think there is one right answer about what blended learning is or should be. You have to consider the teacher, the content, the student needs, and the school’s needs. We are talking to ourselves about being thoughtfully blended. And about being something unique, because of our emphasis on hands-on learning.”

In the summer of that year, after receiving the incubation grant from The AVI CHAI Foundation, they shifted quickly from planning to prepare for a September opening. They found unused space to rent in a small synagogue, which offered two furnished classrooms, a large multi-purpose room with ample space for projects, science classes, or lounging on comfortable

couches, a kitchen, and a small office, with wireless access throughout the building. Since students would bring their own devices, they did not need to purchase computers or furnish stations, but did need to ensure a supply of adapters and extension cords. Located in a residential neighborhood, the site also afforded easy access to a wooded area and a small lake, which could be used for physical excursions and science explorations. With ten girls enrolled, many of whom had participated in the pilot program and were eager to continue learning together, Mizrah opened its doors.

Educational Program and Practice

The two founding partners, operating as co-Directors, became the initial administrative staff. At Mizrah, as at Darom and Zafon, they found a rich pool of candidates who wanted to teach in a new and different program and hired seven teachers (all female) highly qualified in terms of content, including Ph.Ds in Geochemistry and Counseling Psychology, a Masters in Fine Arts, and an accomplished Torah and Talmud scholar, with prior teaching experience ranging from one to over 20 years. As one administrator explained, “They have Ph.Ds, they’re accomplished, and they’re Orthodox, which is a powerful combination.” With the exception of one teacher, who taught across and took administrative oversight for the Jewish studies program, all were part-time, each teaching four to eight class sessions a week. While the part-time schedule made faculty meetings difficult to schedule, Mizrah did set time for seven professional development days, mostly led by their own faculty, to share successful and challenging lessons or to work on strategies such as improving differentiation or assessment.

The most distinctive element of Mizrah’s educational program was the expedition, designed to “make connections across subjects, apply Jewish values to global citizenship, and to use art and technology to express new ideas” (internal document). Each expedition is a year-long, in-depth exploration of a theme rooted in Torah leading to outcomes that would be not only “real” but also, as a Director explained, “relevant to our core mission, to girls’ lives, and to a global marketplace.” In the first year, students investigated topics of food production, culture, and justice, stemming from the Jewish concepts of *tzedek* (righteousness and justice) and *baal tashchit* (wastefulness). For their central project, students interviewed farmers and fieldworkers

in the US and Israel (in Hebrew), and produced a multimedia documentary, which they presented at conferences and to the real audience of the state legislature. The second expedition took up *areyvut* (responsibility for one another in the community), with a particular focus on inclusion and disabilities. Students engaged with local special needs providers, planned an event at a senior center, and produced a large outdoor mural for the town to illustrate the value of inclusion—including both Braille signs and QR codes linked to available community services. In one extraordinary project within the expedition work, a small group of students met with a local official from the disabilities office who explained how his own computer use required a heavy, hot, and awkward helmet/pointer device. They decided to design an alternative built from a baseball cap. After months of work, and with help not only from their science teacher but also a professor in material engineering, they designed and made a working and more comfortable device. He proudly displayed it, with much praise, to newspaper reporters covering the mural dedication. The third expedition focused on water, as a source for life and transformation in Torah and a resource to be studied and cared for, in environmental studies and ecology. The major product was the design and construction of a rain garden in the town center to beautify the site, manage storm runoff, and educate observers about nonpoint source pollution—using sensor technology, solar cells, and robotics to gather data from rain and snow fall, transfer that data into sound, pitch, volume, and duration, and create digital music from that data. While the two Directors took primary responsibility for teaching the expedition course, all teachers made contributions where appropriate, such as storyboarding and developing arguments in English, pollution and humidity measurements in science, spatial analysis and symmetry in math, and mural design and music performance and production in art. In addition, small grants from a local foundation supported “outside experts” who brought needed expertise, including a videographer, materials engineer, landscape architect, sound design artist, and an event planner.

Other courses, in both general and Jewish studies, reflected in some ways a fairly typical array of curriculum offerings for college preparation and Jewish life: English, science, math and history, Hebrew, Talmud, Tanach, and Mishna, with a few distinctive offerings such as Torah research. Unlike typical schools, however, Mizrah used multi-age groupings. In the first year, all

students were likely to be in the classroom at the same time, although individualized plans meant that in math, for example, one was working on SAT prep while others were doing Algebra I and II. Instead of offering a full array of graded science courses, 6th and 7th graders took biology together, 8th and 9th took physical science, while individual students might advance faster or take on more advanced tasks. To make sure course content prepared students for college, teachers talked of using fairly typical standards as benchmarks: state standards, Common Core, SAT preparation, and their own prior experience.

At the same time, each course was designed to include Mizrah’s distinctive blend of inquiry-based and interdisciplinary learning, online learning, projects, and in-person instruction. An observed math lesson, for example, opened with students using popsicle sticks to construct triangles, shifted to an online scavenger hunt for corresponding structural images in architectural design, then moved to a physical activity where students searched the school photographing triangles in actual construction and posting them to a collective Google Doc for analysis and display. In physical science, students mixed chemistry and English into their investigation of compounds and carcinogens in common household products as they analyzed commercial shampoos, and, after considerable experimentation, created (and tried) their own and then created advertising campaigns for them.

Across courses, certain online tools like Google Docs, Moodle, Movie Maker, Skype, and Vimeo were commonly used. Mizrah did not, however, choose a primary online curriculum provider; depending on content needs, teachers would choose their own resources. In most classes that meant, one explained, “go to the primary source.” Students searched for data, found explanations, and engaged in activities maintained, and freely shared, by government, philanthropic, or professional association sites such as American Chemical Society, The American Institute for History Education, Jewishpartisans.org, Khan Academy, MiddleSchoolChemistry.com, NASA Satellite data, Readwritethink.org, Sefaria, the Society for Automotive Engineers, and Virtual Nerd. As one teacher reported, “We are always thinking about how we can enrich what we do in lower cost ways.” In math and in Hebrew language, teachers preferred a more structured curricular approach and did choose online providers. In math, teachers experimented with ALEKS, Thinkwell, and then Pearson, which provided assessments that offered “a complete teaching tool” to track

individual student progress, scores and even the amount of time spent on homework. In Hebrew language, they began with Lookstein LIVE and an on-site proctor, then added Rosetta Stone, piloted Bonim B'Yachad, and finally turned to NETA and an on-site teacher. They were not fully satisfied with any provider; instead, they combined them in different ways with in-class conversation since, as the teacher explained, even with only ten students they had “seven levels of *Ivrit*” (Hebrew) fluency and very different learning styles.

We saw evidence of fidelity to the student-centered approaches of “problem-based learning,” “expeditionary learning,” and we saw stunning examples of interdisciplinary and integrated learning opportunities both in and across general and Jewish studies.

Mizrah’s teachers, like Darom’s, did find that with blended learning as a common expectation, they needed to add computer skills, and even elementary coding, to the curriculum. While older students might be quite accustomed to the hardware, they still needed lessons about net etiquette, safety and privacy issues, and the ethics of signing into a free educational site that requires a birth date indicating age over 13—which most, but not all, students could honestly do. A key issue for a school where students search sites on Holocaust stories, survivors, and resistance is the reliability of sources. To give students an appropriately experiential lesson on how to search and verify websites, one teacher assigned research on the tree octopus. After a bit of effort, and then quite a bit of laughter, students found it to be a non-existent creature with a very compelling and convincing website (<http://zapatopi.net/treeoctopus/>).

To assess student learning across the range of skills and content, Mizrah’s design called for not only standard tests and papers, but also a system of academic and skill based badges. They began brainstorming and prototyping in the first year, trying and refining in the second, and in Year 3 had a full system of three types of badges in place: academic (linked to course-work), skills (independent learning) and recognition (attitude and behavior). Topics, criteria and assessments were designed by teachers, with mastery demonstrations in areas such as

computer literacy, Hebrew calligraphy, hiking (including compass use and topography), Java script, and music theory. To earn a Shakespeare Scholar badge, for example, a student would choose and see a play (live or video) and read the text, compare three aspects of the two versions, then memorize, perform, and record a passage. They also added a “design-your-own-badge badge,” where students themselves develop criteria and assessments; two proudly pointed to badges they had created (and earned) in Morse code and video editing. As in Darom, we saw evidence of bold and powerful learning opportunities for students at Mizrah. We saw evidence of fidelity to the student-centered approaches of “problem-based learning,” “expeditionary learning,” and we saw stunning examples of interdisciplinary and integrated learning opportunities both in and across general and Jewish studies.

Financial Structure

All of the new schools in our study aimed to keep costs low, both as a matter of principle and as a practical need. However, for a tiny school like Mizrah, with enrollment never above 20 students, the pressure to keep costs to what they called “bare bones” level was particularly intense. With the rental of unused synagogue space, they were able to keep facilities costs low: \$18,000 for rent and utilities, which included electricity, basic maintenance, and snow removal. To bring in blended learning, they relied on what is commonly called the “bring your own device” strategy, so hardware and bandwidth costs were kept to a minimum: \$3,000 for phone lines, and \$4,000 for internet service. For software as well, spending was kept down by choices to “go to the primary source” and access sites with no, or very low, fees; hardware and software expenses combined totaled about \$10,000. Even though most teachers were part-time, often teaching only a few class sessions a week at a \$40 hourly rate, salaries and benefits still took up the major share of the school’s budget, rising over the three years from \$200,000 to \$230,000 out of total reported expenses of \$300,000 to \$350,000.

Despite saying that they were neither well prepared nor well suited to take on development work, the two Directors did report spending “a lot of time and effort” to identify and apply for funding to supplement the \$50,000 planning grant. They were successful in bringing in a number of individual donations,

and received grants from several different local and national foundations (ranging from \$1,500 to \$50,000) targeted toward specific purposes: integrating arts, creating badges, developing expedition projects, and even one to underwrite the cost of using Aleph Beta. Mizrah also benefited from in-kind donations: experts volunteering instructional or counseling assistance, or the town donating materials for a rain garden. However, their efforts to find larger grants, or funding for operating costs, were less successful; most foundations, they reported, would not consider funding “till you exist for five years.”

That meant that the pressure to meet enrollment targets was considerable, but enrollment was Mizrah’s most challenging area. Initially, the Directors had said they thought it would take eight years to reach self-sustaining numbers, a timeline that was reasonable given research on new school start up struggles, but unrealistic in terms of the funding they had available. So they developed their business plan with a more optimistic timeline: 10 students in Year 1, 21 in Year 2, 34 in Year 3, 47 in Year 4, and 60 in Year 5, by which time—with small grants and a “bare bones” budgeting strategy—they could break even. But even those low numbers were beyond their reach. In Year 1 they did enroll 10 girls in grades 6-9, but in Year 2 only 14. As they entered Year 3, with high hopes and a broadened marketing strategy, they still had just 14 students. The Directors recognized that their model was radically different from traditional day schooling, saying, “We knew we were ahead of the curve, but had no idea how ahead of the curve we really were.” Nor had they realized how hard it would be to recruit students for a school so far from the norm. So they worked with a consultant to find new ways of explaining what many might see as incommensurate contradictions, such as, “We want to be modern, but are single sex,” or, “We teach girls *Torah Sheba’al Peh*, so it’s not *Haredi*.” They shifted their marketing strategy from descriptions of a high-quality program to a message oriented toward meeting unmet needs in the field, appealing to families in need of “opportunities for girls who don’t fit the box but are Orthodox.” And deciding that they might be “looking for needles in haystacks, but I think there are a lot of needles out there,” they expanded their search to go further out geographically, visiting neighborhoods in nearby states with many Orthodox families but few alternative educational opportunities. That effort brought in four boarding students, and led to a new structure they called “home for

Shabbat,” with a little rescheduling and additional supervision, students could stay in a nearby house and attend classes Monday through Thursday, but return to their families on Friday.

With the expanded marketing, the boarding option, and considerable positive coverage in the popular press, projections for Year 4 showed strong interest (though not full commitment) from 30 students. But the weak enrollment problem was further exacerbated by an even larger tuition problem: almost half of the students who did enroll could not pay full tuition, so 14 students, at an official tuition rate of \$12,500, were only bringing in \$87,000 of revenue. Since that revenue did not come close to their estimated \$375,000 in expenses (even with the addition of the small grants), the financial structure was unstable enough to produce what one Director called a “life or death” struggle for the school.

Progress and Status

In the spring of Year 3, administrators and staff struggled to find ways to keep the school alive, and to adapt the design but stay true to the mission. Teachers, who remained enthusiastic and proud of the work they were doing, agreed to take a 10% pay cut. Parents, who talked of “traumatic experiences” their daughters had gone through in traditional day schools and would not even consider enrolling in one again, worked at fundraising to keep the school going, but raised only about \$20,000. The two Directors gave up their own salaries, and even more painfully, gave up teaching expedition, to devote more time to fundraising and marketing. And everyone talked together about trying to deal with “a lot of anxiety and angst,” to keep “looking with an open mind at possibilities,” and, as a Director put it, to put options “in the popcorn popper of ideas.”

“We knew we were ahead of the curve, but had no idea how ahead of the curve we really were.”

In the summer of 2015, they realized that “the scales finally tipped, and we had to let it go.” So they reluctantly made the decision to close the school. Unlike Darom’s students, Mizrah’s did not need help finding other schools that would take them in; most would return to home schooling. But even without the Mizrah building to keep them together, they talked of

finding ways to work together, and to maintain the bonds they had built with each other. The founders and faculty, too, were searching for ways to keep their work going forward, “but not a day school, since the market is too small and running a school is unsustainable.” Instead, they were trying to imagine alternatives for what “Mizrah 2.0” might be, whether a small program within an existing school, or a partnership with a school of education that might be able to support a lab

experience to train teachers in expeditionary learning or digital badging. Like Darom’s founders, they ended their experience not with regret, but with pride in what they had been able to accomplish: “Though it was a difficult decision to make, it has really illuminated how successful we have been. Even the fact that we opened in the first place was a miracle. And having been able to create a new methodology of integrated learning with success is also incredible.”

Lessons Learned

Starting a new school is both exhausting and exhilarating

All of the founders recognized from the beginning that starting a new school, particularly a different kind of school, would be a highly demanding endeavor, even to the point of talking about needing to be “crazy enough” to take on such a challenge. The ongoing demand of long hours, the quantity and complexity of both managing start-up strategies and implementing blended learning simultaneously were, by all accounts, “exhausting.” Founders consistently reported that “starting a day school is hard,” or it is “certainly not an easy road.” They talked of encountering frequent “bumps in the road,” and even occasional periods of a “daily dose of demoralization.” They spoke of the emotional costs of struggling with uncertainty and risk: “There has not been a single year that we have been sure we would survive, and we have done it each year, with a lot of anxiety and angst.” As one advised anyone considering taking up the challenge: “You really need that grit, that persistence; otherwise it knocks you down.”

Yet both founders and faculty frequently used words like “exhilarating,” “exciting,” and “energizing” to describe their work. They pointed, with justified pride, to the products they created, the programs they developed, and the accomplishments of the students they served. They embraced the opportunity to be involved not only in designing a new school, but in building a new kind of educational program, or even a movement, that could satisfy both personal mission and educational vision: “This is my life we’re talking about,” or, “The personalized learning, the possibility—it keeps me going.” In fact, even when they took cuts in salary, or faced the closure of their schools, they worked hard to keep their work going forward. The only regrets they expressed, even in schools that closed, were not finding sufficient financial resources, or having sufficient time, to keep their work going.

Getting established and reaching enrollment targets takes more time than planners expected

Starting a new school, establishing a fully working program, and enrolling enough students to become self-sustaining takes

more time than any founder had fully realized. That created situations where often they were setting unrealistic expectations, and then struggling to meet unreachable targets. It also, all too often, meant that it took more time than schools had secured funding for, since both their initial business plans and the incubation grants only allowed for three years. After their experience, administrators looked back and questioned that assumption, wondering, “Three years, where did that number come from? It needs to be a lot longer,” or arguing, “One thing we would like [funders] to understand: It takes longer to start up.” Darom’s Director offered, as a key lesson to anyone planning a new school, “We know now that it takes longer than the three years we had anticipated. It takes five, or some say even ten for a high school.”

Overall, administrators tended to say new elementary schools would need at least five years, and high schools maybe five to seven, which is more in line with research on both change implementation and charter school start-ups (Siskin, 2011; Miller et al. 2016). In fact, in searching for funding, some administrators found that other foundations would only award grants to schools after their fifth year, figuring that only then would a school become secure enough to be worth the risk. One Jewish studies teacher reasonably cautioned that anyone starting a day school should plan for “seven years of scarcity.” None of the new schools, however, had made plans or secured sufficient funding to accommodate that length of time.

Planning time counts

All of the new school staff attested to the tremendous importance of spending a year in comprehensive strategic planning before the school opened—both in schools that did invest that time and those that wished they had. Even when Zafon staff initially complained of “constant meetings,” or hours “spent on conversation, frustration, and study [that take] a long time and it’s not much fun,” they later reported it as time well spent that saved them time in the long run. Mizrah and Darom, by contrast, moved from grant award to school opening in just a few months. As one Director said, that gave them flexibility to react to needs they probably would not have anticipated, but

it also meant staff found themselves struggling to find time to make design decisions while simultaneously running the school. The long lists of software they used, for example, reflect not only the difference of being secondary schools (with longer lists of subjects to cover), but also the length of time spent trying, evaluating, rejecting, and searching again for programs that would fit their needs. The costs in both instructional time and administrative time were considerable. So, too, were the time costs of searching for funding opportunities and marketing strategies, which took them away from leading the school when their presence and attention were needed. As both schools' founders attested, investing more time in those areas before the school opened would have saved them both hours and "angst" later on. Indeed, many charter school authorizers and funders have built a required year of planning time into their award structures. While spending a full year in planning might not always be feasible for new day schools, it does seem that it would be beneficial.

Where and with whom that planning time is spent matters too

Whether they had two months or 12, school founders tended to invest their planning time most heavily in the areas that reflected their own specific mission and strengths. Darom's planning team spent most of its brief planning period in creating personalized pathways, and in developing its "book" of comprehensive and inclusive Jewish studies curriculum. Zafon's team worked for a year developing a solid structural model to increase efficiencies and an educational strategy to increase data use. Mizrah's founders focused on creating ambitious expeditionary learning projects, integrating arts with STEM learning to make meaningful contributions to their community. In each case, they produced particular parts of a school design that were exceptionally strong. Moreover, as they built planning teams, they tended to bring in like-minded colleagues to develop and refine the work in those areas, further amplifying their own strengths.

With whom to spend time planning became an issue when school teams needed not to amplify but to add to their strengths. Few founders can fully anticipate the challenges of starting a new school, and few of these new school leaders even had experience as administrators in existing schools. External

connections allowed them to expand their thinking, or pushed them to think in other areas. Zafon, for example, had the advantage of an external consulting company experienced in both starting schools and implementing blended learning that contributed a long list of things to consider. In their "parlor meetings," prospective parents provided feedback about their own distinctive, and sometimes, the Head noted, quite different priorities: "We had a meeting, for parents, to talk about this earth-shattering blended model, but we spent half the time on the bus schedule." Mizrah, too, drew on external insights to learn more about family priorities when the founders brought in a development and marketing consultant who "turned our thinking inside out" in an experience one Director described as "like being back in graduate school." While that connection came too late to solve their enrollment problems, it clearly made a difference in both their approach and in their numbers. Across the schools, administrators talked of welcoming visits from curious colleagues who wanted to see these new schools in operation, and brought with them "good questions," and alternative options. Moreover, all of them wanted the opportunity to reach out to other schools doing similar things, and to see how those programs worked—though none had managed to find time or funding to make that happen. The added value of strong external relationships, with colleagues or consultants who can bring different perspectives and ask the difficult questions during the planning process, makes the costs in time and funding an investment well spent.

Finding teachers was easier than anticipated

Across the sites, administrators spoke of the remarkable ease of finding a rich pool of candidates, many with strong backgrounds including advanced degrees, impressive qualifications, and extensive experience. That was particularly striking given the combination of high demands for teaching in a new school with new ways, with the low compensation for what were often part-time positions. All of the new day schools with blended learning models, not only the case study sites, did have the advantage of being located in major metropolitan areas and close to universities, which may well be a key contributing factor. Across the schools, some candidates were drawn by part-time schedules, and some by the mission of offering high-quality day school education at lower cost, but

most talked of the exciting potential of helping to design blended learning experiences for students, and of escaping the constraints of content coverage and frontal teaching they had experienced in traditional schools.

“Online learning is a crucial resource, as it broadens the scope of material available to the student, as well as the possibilities in how material may be taught.”

That did not, however, mean that they were necessarily well-prepared for what the positions would actually require. Though most were, as administrators reported, “by and large, amazing and committed,” in a few cases, the lack of fit became apparent quickly, and schools had to deal with letting teachers go, or counseling them out—something they had not prepared for in their planning. It quickly became apparent that defining the kinds of teaching that would match the school mission, and interviews or observations, were critically important hiring procedures for new schools to develop to determine fit.

Changing teaching, however, was still difficult

The teachers who did come to the new schools, and the founders who designed them, all agreed that blended learning offered new possibilities for *how* teachers would teach. As Darom’s Director put it, “Online learning is a crucial resource, as it broadens the scope of material available to the student, as well as the possibilities in how material may be taught (emphasis added).” Participants across the study were consistent, and clear, in expressing the idea that while blending learning is not about replacing texts or teachers, it is in part about displacing traditional reliance on *teaching as telling*. In this, they align with much of the literature advocating for blended learning: basic skills could be taught by online providers, freeing teachers for the more creative projects and engaging discussions. Whether they talked of personalized learning at Darom, 21st century learning at Zafon, or project-based learning at Mizrah, this expectation that teaching would be done quite differently was expressed, and espoused, across the schools.

Teachers did describe these powerful approaches as the kind of teaching they wanted to do, and to do more of and more

often. But they also said this was something they were working toward that would take considerable time. They often reported the “learning curve” as steep. As Mizrah’s learning psychologist observed, “It’s been hard,” and it is a “real worry, because teachers bring in an automatic predilection for the ways we were taught.” To make real change, she continued, would require “constant professional development, on understanding how they learn, each individual girl, and about progress as opposed to what they attain.” Yet with the constraints of keeping costs low, the new schools could provide few resources or structures to support the ambitious pedagogical goals they had set. With few exceptions, like bringing in outside experts for technology training, professional development was primarily internal, through peer observations or task-oriented faculty meetings where teachers shared ideas and frustrations. Administrators described that collaborative learning as highly valuable, even “the best professional development.” And it was certainly cost-effective. But it left the burden of changing practice largely on the workload of already hard-working teachers.

Blending in a dual curriculum day school is doubly challenging

Both administrators and faculty talked of building a blended learning *school*; yet across the sites, many expressed the idea that Jewish studies would be, as one teacher put it, “the least blended.” At Zafon, where computer stations are used in every classroom and every grade, the Head did not expect them to be used in every subject, not for lack of interest but “because the resources are not there yet.” Even seemingly simple problems, like how to shift QWERTY keyboards to Hebrew, or what to do with overly active monolingual spellcheck systems, created extra challenges (in one humorous mistranslation Word kept replacing *Ivrit* with riot). In Hebrew classes themselves, where several schools did use structured online resources (Lookstein Live, TaL AM or Rosetta Stone), teachers were often less than satisfied with the quality, and struggled to find effective ways to blend the technology with their own teaching to reach desired levels of oral and written fluency.³ However, that problem may not be unique to software limitations; as one Hebrew teacher argued, the too often unmet challenge of fluency is “the irony of the day school system” in general.

³ There are now more online Judaic resources available than there were at the time of the report.

While less than satisfied with online *instructional providers*, however, Jewish studies teachers were excited by the possibilities afforded by online *resources*. Harkening back to older traditions, they talked of students working together in small groups, or *chavruta* (paired scholars learning together) to study, analyze, and argue about old texts now available through new media. They used YouTube examples of *Purim Shpiels* (comic skits celebrating the holiday) to inspire students to create, perform, and publish their own. They explored maps and created multimedia guidebooks, developed video editing skills to make documentary films, Skyped to conduct interviews across the world, and contributed to the new site Sefaria. While all talked of finding relatively few high-quality programs compared to what they thought general studies teachers had available, they also embraced the opportunity to make their own materials or to have students make them, and proposed construction of a consortium where they, and others, could share what they had created.

In the risky business of starting new schools, some will need strategies and support for closing down

No one opens a school with the intent of closing it a few years later, although the founders did all recognize—at least to some degree—that the risk was there. As one put it, “We knew rationally from the start that it might not work, but we didn’t really let ourselves think that.” Yet two of the schools did have to confront that situation. They expressed few regrets, although some did wish they had rearranged timing or planning priorities: “It really would have taken five years,” or, “If we had the chance to start over, I would have raised millions of dollars first.” But they did, approaching the end, raise new questions,

and found little to guide them: “I could really use some insight on what to do with the closing of the school.”

Two kinds of questions dominated their quest for insight. The first, and most pressing, was what to do with their students. Though the numbers might be small, the commitments families had made, and the consequences for students, were substantial. Administrators called on outside connections to help place students in established schools, to navigate public school enrollment options, or to pull together resources to support families who would turn, or return, to home schooling. And they spent considerable time not only advising, but simply consoling families and adolescents who experienced this as a considerable loss. The second, and almost as emotional for the school staff, was what to do with the “stuff.” They had made substantial investments in designing programs, curriculum materials, and assessment tools, and staff were rightly proud of what they had created. As one of Mizrah’s Directors explained, the question was “what to do with the valuable artifacts of learning we have generated, and the multitude of shared documents our team has created in the past three years? Is it worthwhile to consider how to archive and share our curriculum? Our Moodle courses, Google documents, program materials, digital badges, and expeditionary learning outcomes?” All of the schools had begun with the idea of developing materials that could be shared widely with the field, and all of the schools did produce tools and resources that other schools, both new and established, could well learn from. They had imagined the possibility of a day school consortium that might house and distribute materials for that purpose. Closing down before they had the chance to create that infrastructure left them with a wealth of materials to share, but no known mechanism to archive or distribute the valued products.

Promising But Not Proven: Opportunities Suggested by These Cases

Special education offers a special opportunity for blended learning schools

None of the new schools had fully anticipated, or planned for, the degree to which families of students with special needs would enroll in their schools, and even by the end of the study, none of the schools had reached the point where they could fully capitalize on that opportunity. Yet, as one administrator observed, “It may very well be that schools designed to offer a different kind of educational experience attract students whose experience with traditional schooling has been less than successful.” At Darom, for example, the Director talked of being surprised by “students with greater needs than we had any way to know,” while teachers described the challenge, even with small school and small classes, of teaching “eight students, five levels” or “several with academic or emotional challenges.” At Mizrah, a consulting psychologist characterized many of their students as “out of the box, in the most positive way; we do not have behavior problems, but we do have some with learning needs,” and another teacher reported that many turned to home schooling because they “had a traumatic Jewish educational experience” in traditional day schools. Even at Zafon, where the Head and several teachers had backgrounds in special education and the idea of offering something like an IEP (Individualized Learning Plan) for all students had been built into the original design, teachers said with “kids coming in with so many different levels, it’s really a challenge to find something that works for everyone.”

While none of the new schools had stressed the benefits of blended learning for special needs students in their marketing or their planning, both administrators and faculty talked frequently and positively about attempting more differentiation, and about their “inclusion philosophy,” or the particular mission of Jewish education to, as one cited Proverbs to explain, “educate each student in his way.” While committed to that philosophical idea, many were less confident about their own capacity to follow through on truly meeting the needs of students they wanted to serve. That, one explained, would take additional or a reallocation of resources: teachers “have been

responsive, and could do more if they had more resources. We’d need to have it be woven in even more, to support some of the secular studies teachers to be able to use online to do more differentiation so that becomes an easier option. There needs to be more development of staff to do that.” Administrators were supportive of the idea, but they too pointed to the problem of resources: “We would like to have a learning support person to fit with our inclusion philosophy, but now parents would have to spend the money on outside support.” Zafon’s Head did find ways to bring in outside support without the school, or the parents, having to carry the cost when he accessed specialist services from the public school system. But still, as a teacher explained the dilemma, “All teachers are resource teachers now,” but “we need more help.”

Teachers did find online programs helpful in providing diagnostic data they could readily use for groupings, pacing, or additional practice. And having all students working at their own pace, or on their own “playlists,” afforded opportunities for students to learn differently with less stigma or stress. But online instructional programs offer little guidance in choosing different **kinds** of learning opportunities to suit different learning needs and styles. Despite their considerable effort, schools lost some students, and some students lost valuable learning time when teachers lacked the capacity or resources to make appropriate adjustments. Still, given the schools’ missions, willingness, and efforts, it seems that special education students may well present an opportunity not only to recruit and serve more students, but also optimize the advantages of online/blended learning’s diagnostics and personalized learning at considerably lower cost. On the other hand, these considerations need to be weighed with caution. If a school is perceived to specialize in a niche student market—whether it’s special needs or independent Orthodox girls—it may have challenges recruiting enough students to support the financial model.

Blended learning can help to contain costs, without constraining learning opportunities

For both these new schools, and for The AVI CHAI Foundation, the possibility of using new technologies and blended

learning to educate students well (or even better) at a considerably lower cost was a fundamental goal. In fact, the hope that these schools would provide existence proof of that possibility to the field in general was a primary motivator for the incubation grants. In the case of Zafon, which reached its preliminary enrollment and budget targets just after this study ended, that objective has so far been met. And indeed that basic design has now spread to two other schools, in an effort to scale up the model for wider use. While the cases of two closed schools raise critical questions about the practicalities of how long it takes to get a school established, of limited planning time and marketing strategies, and of just how much additional risk is attached to secondary schools and radically different models, they did demonstrate remarkable opportunities to provide high-quality education to a small number of students for a very low cost.

By far the largest contribution to cost reduction came in reducing salary expenses, which generally represent the largest expenditure in any school budget. Schools accomplished this by using new technologies and blended learning not to replace teachers, but to reconfigure teaching assignments, using the personalized learning possibilities of new technologies and the adaptive capacity of teachers. In some instances, part-time teachers only came in for some of the class sessions, while high school students worked independently or in small groups on other days. In others, two or more levels of the same class, such as Physics and AP Physics, or Algebra I and II, shared the same room at the same time with the same teacher, but used different online and teacher-designed curriculum materials—saving the cost of staffing two sections. In the most dramatic example, at Darom, a single science teacher “rotated” between chemistry, biology, and earth science students in the same room at the same time. When students worked independently, they utilized online materials from a variety of sources. This one teacher covering three different classes provided one of the clearest examples of how blended learning can produce substantial cost savings, and might help even well-established day schools deal with the challenge of staffing not just small, but tiny classes.

Other forms of savings, though not as large, were consistently used to keep costs down. Once the costs of computers were covered, either by the schools or by the students, textbook costs were reduced considerably as teachers identified software providers for students to access curriculum materials or data

sources, often at no cost, from popular sites like YouTube to professional sources like NASA. With little investment beyond basic kitchen supplies, teachers found ways to use free access to data sites so students could reach up to the stars or down to ocean floors for rich, rigorous, and real scientific explorations. Commercial software, like iReady or Pearson Math, might cost as much as textbooks, but the diagnostic data they provided saved the additional cost of bringing in learning specialists. While more in the category of promising than proven, the use of such diagnostic data, combined with the state-provided consulting for special needs students, offers the possibility of substantial savings. Built into the federal Individuals with Disabilities Act is the assumption that the cost of educating students with disabilities is approximately double that of average per pupil cost, ranging from 160% for students with a learning disability to 300% for those with severe or multiple disabilities. If schools can serve students well without having to create special sections, or hiring specialist teachers, more day schools can serve more students without incurring those prohibitive costs.

Networking leaders for collective advantage and collegial support, even in informal ways, can strengthen both schools and programs

New schools, as Zafon’s Head characterized it, tend to keep administrative staff “lean” to keep costs low. That often meant school leaders felt even more isolated than leaders at established schools, saying, “It’s just me and the teachers,” or “I’m the only one.” Yet despite the fact that none had started a school before, none had ever led an established one, and some had never even taught in one, no school had included professional support for leaders in their designs. Just as external connections during the planning phase helped to expand thinking, provide feedback, and offer useful practical advice, informal opportunities to connect with other administrators strengthened their work while operating schools.

Some administrators did find support from the DigitalJLearning Network (also supported by The AVI CHAI Foundation), but their assistance efforts were aimed primarily at established schools. New school leaders also used conferences, such as the National Jewish Day School Conference or iNACOL, to find each other and exchange stories and strategies so “we don’t all

have to re-invent the same wheel.” They also turned to the old technology of telephones to keep in touch with each other, or to reach out for advice. As Darom’s director recounted, to “get linked up to people doing this, at all different stages, I learned so much from talking to those people; it cut the learning curve by two-thirds.” At Mizrah, too, the leaders talked of the importance of “building channels, of finding connectors” to their own professional thinking, while Zafon’s Head told us that having other school leaders visit his school provided critical opportunities for professional learning on both sides. All expressed the desire, though none had the capacity, to visit each others’ sites and observe—as they made sure teachers did in each other’s classrooms: “We would want to see innovative models, both inside and outside of Jewish education,” said one. Another lamented, “It’s just not possible for us to do, because of time and money.”

While all of the schools had thoughtfully created opportunities for students to work together... such opportunities for school leaders were both exceptionally valued and exceedingly rare.

A team of researchers from CRPE, after observations in 37 blended learning schools (including some supported by AVI

CHAI), reported that initial analysis “makes clear that this work shouldn’t—and often can’t—be done alone” (Gross, 2016, post 4). They concluded that leaders, especially in the challenging work of implementing new programs or schools, need more than just technical training; they need “thought partners” to serve as sounding boards and critical friends, asking difficult questions and pushing them to think about next steps. Dan Meyer, a prominent educator in math and technology, cautions that in moving to personalized learning, individual work on computers (even if engaging and rigorous) risks the unintended cost of losing “collective effervescence”—Emil Durkheim’s term for the frequent and active social interactions in groups that enable and enliven moral and religious membership (<http://blog.mrmeyer.com/2016/collective-effervescence-is-the-cost-of-personalized-learning/>). While all of the schools had thoughtfully created opportunities for students to work together, learn from each other, and build the ‘collective effervescence’ of their school community, such opportunities for school leaders were both exceptionally valued and exceedingly rare. Strengthening network ties among new school leaders, convening gatherings, and creating opportunities for them to visit sites that are going (or have successfully made it) through starting a school seem highly promising.

Conclusion

These schools have all made external connections in the opposite direction as well. As mentioned above, educators from other day schools, both established and new, have made visits to see what these designs look like in practice. At conferences and workshops, attention often centered on their practices, and their prospects for success. Newspaper stories have featured not only their specific projects and events, but their stories as examples of possibility and promise in a field where many are wondering with worry about the future of day schools in general. Whether because they were funded by The AVI CHAI Foundation, because they represent radical experiments, or because their leaders have been very public advocates for rethinking day school education and finance, these schools generated considerable attention across the country. In almost every established school we visited, teachers and administrators spoke of looking to them as a test case of whether an affordable day school built with blended learning is really possible, and looking to them for specific advice about what does, and does not, work for blended/online learning in day schools.

From their cases, and from the lessons they offer about starting, operating, and even closing a blended learning day school, these sites have much to offer. Together, they suggest that starting a new day school is both exhausting and exhilarating.

Planning time counts, but where and with whom that planning occurs matters as well. Where schools invested in planning design features or curriculum materials, they expressed and amplified their missions and distinctive strengths; when they brought in people with different perspectives asking difficult questions, they compensated for weakness and expanded their thinking. They found eager and qualified faculty with relative ease, and eased them into new and different ways of teaching with some difficulty but considerable progress. They brought in new technologies, new materials, and new ways of learning in both general and Jewish studies, animating modes of teaching and learning in new ways. And they point to new possibilities for the future, to expanded opportunities for including students with special needs, and more personalized or differentiated learning for all students. They also point out an often acknowledged, but rarely addressed, concern of educational leadership more generally: Leadership can be a lonely proposition, and the challenges are intensified when dealing with issues of change and uncertainty.

Not all experiments succeed, not everything works well at first, but much is possible. Thus, while not all of the schools arrived at happy endings, their stories are collectively encouraging; even in a few short years, much was accomplished, and much learned.

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