BUILDING 21ST CENTURY CATHOLIC LEARNING COMMUNITIES:

Enhancing the Catholic Mission with Data, Blended Learning, and Other Best Practices From Top Charter Schools

Lexington Institute

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Catholic K-12 education in the United States is in crisis – with rapidly declining enrollment, untenable financial models, and new competition from public charter schools. The 2012-2013 school year will be the first in which more American children will be enrolled in charter schools than Catholic schools. This milestone presents an opportunity for Catholic schools to innovate and renew their mission by learning from high-performing charter schools.

The charter school movement adopted many of the traits that set Catholic education apart – discipline, high academic expectations, and a strong sense of community. The best charters merged those traits with basic business principles to deliver academic excellence and strong social support at a low cost.

Another distinguishing factor of many top-performing charter schools is the regular use of timely data to inform differentiated instruction. A new education model pioneered by charter schools called "blended learning" promises a high-quality, lower-cost education to students regardless of their background. Blended learning uses technology to customize student learning and promote subject mastery. Teachers are empowered to intervene and adapt to student needs. Schools garner tangible data to address their specific weaknesses and to market their strengths.

As important, blended learning complements the Christian mission of Catholic schools. Student-teacher interaction is actually increased under the model, as time and space are used more efficiently and effectively. The social capital and trust Catholic schools engender as faith communities, or "families," aid in the implementation of this new model.

Blended learning's essential innovation is not strictly its use of data, but that it maximizes data usefulness for teachers, parents, administrators and funders. Schools willing to embrace this model can see dramatic improvements in financial and academic results and better continue their Catholic religious mission.

This paper discusses the progress of several, innovative Catholic education models from around the country that are already implementing many of these practices with impressive success, including San Francisco's Mission Dolores Academy.

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I. INTRODUCTION

In the last few decades, Catholic school enrollment has declined precipitously from a peak of 5.2 million pupils at the height of the Baby Boom to just over 2 million today.[1] The sharp decline is partially the result of demographic changes, as Americans age and move away from urban cores where Catholic schools are clustered. Scholars like Abe Lackman of Albany Law School argue that the rise of charter schools also explains some of the steep decline in recent decades, as half a million fewer pupils attended Catholic schools. Charter schools, Lackman contends, lure away students that would otherwise consider Catholic schools.[2]

> "Charter schools are competition, and Catholic schools that don't recognize that will be on the menu instead of having a seat at the table."
>
> – John Eriksen, Superintendent, Paterson (NJ) Diocese Schools

Most Rev. Gerald F. Kicanas, Bishop of Tucson, celebrates Mass with school children from St. John the Evangelist Catholic School, Santa Cruz Catholic School, and St. Ambrose Catholic School at St. Augustine Cathedral in Tucson.

The 2012-2013 school year will mark an especially dubious milestone for Catholic education as charter school enrollment surpasses that of Catholic schools for the first time. Education scholar Diane Ravitch observed in 2010, "Where charter schools are expanding, Catholic schools are dying."[3] For philanthropist Leo Linbeck, who has given generously to both Catholic and charter schools, Catholic educators cannot romanticize a bygone era when they had a monopoly on their parishioners' children, "It's a system of choice now, they have to come to grips with that."[4] For many leaders in Catholic education reform, the choice is clear: innovate or die.

Joseph Womac, the Executive Director of the Fulcrum Foundation, who works closely with the Seattle Archdiocese schools, sees the rise of charters as both a challenge and an opportunity. Without a monopoly on high-quality, character-focused education, Catholic schools "need to diversify our brand offerings and create value for diverse customer bases." That value must primarily come through innovation, according to Womac, because Catholic schools have exhausted the efficiencies of the traditional business and education models – "these schools are running about as cheap as possible under the traditional model."[6]

For Womac, who is partnering with KIPP co-founder Scott Hamilton to turn around a school in Seattle, innovation can mean 'disrupting the classroom' through technology that

both customizes learning and keeps costs low. They have introduced 'blended learning' to St. Therese, a Catholic elementary school in Seattle that was on the brink of closure.

Blended learning challenges the assumptions of the traditional schooling model or "factory model" for education. According to Michael Horn of the Innosight Institute, the factory model was designed for standardized mass production of students and to prepare them for 20th Century industrial jobs. They required basic, undifferentiated skills churned out at regular intervals. The model assumes that highly regulated inputs of students, teachers, resources and time can and will produce uniform, high quality results at low cost.[7] This is no longer true.

Under the factory model, students are treated as interchangeable parts that will learn at prescribed times in prescribed ways consistently. Those assumptions have led policymakers and educators disappointed with educational outcomes to call for more inputs in the form of public dollars for lower student to teacher ratios and improved infrastructure. The hope is that more inputs mean better outputs. The state of New Jersey's experience of putting endless dollars toward the problem of low achievement shows that greater inputs do not yield better outcomes. Scores barely budged in Newark schools despite injecting a mind-boggling $22,251 per student in 2007 – twice the national average per pupil cost today and eight times what was spent on average per pupil in the United States in 1961.[8]

Instead, blended learning emphasizes something that the last half century of education research has taught us: customization works.[9] Students learn differently, at different times, and in different ways. An oral lecture may communicate a concept to some of the children adequately while hands-on demonstrations work for others. Great teachers, who possess the dexterity and patience to identify their students' learning habits, can and do build lesson plans based on their classes' needs. Even the best teachers are unable to track student performance and mastery day-by-day and hour-by-hour on a consistent basis.

Compared to the traditional education, blended learning is what education scholar Fredrick Hess calls a "greenfield" schooling model – one that challenges assumptions and

The Innosight Institute defines blended learning as:
"*a formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path and/or pace; and at least in part at a supervised brick and mortar location away from home.*"

offers the opportunity to transform education.[10] Blended learning's customization through technology empowers teachers to tailor the time-table and educational plan to every student's needs.

The blended learning model uses technology to deliver instructional material and track mastery. Teachers and other staff are leveraged to individualize instruction and produce special lesson plans based on real-time student results.

Early adopter charter schools like Carpe Diem in Yuma, Arizona and Rocketship Academy in San Jose, California have posted substantial proficiency gains and out-pace their peer schools in reading and math proficiency. Recently, a handful of Catholic schools have seen similar results with mastery-based, data-rich blended learning curriculum.

"Technology uniquely enables schools and teachers to optimize and personalize education like never before. Furthermore, technology leveraged learning empowers the students to be more engaged in their own learning, thereby taking more responsibility and therefore be more invested in the outcomes."

--Rick Ogston, founder, Carpe Diem Schools

In addition to improving academic performance and teacher effectiveness, blended learning often drives down the per-pupil instructional cost, offers customized learning tailored to student needs, provides rich data and assessment tools, and presents an opportunity for Catholic schools to 're-brand' themselves to both philanthropists and parents. Together, blended learning offers Catholic educators a sustainable path forward through a new education and business model.

II. DEFINING DATA: MISSION AND METRICS

Understandably, Catholic educators, who put great stock in their success at avoiding most of the worst education fads of the past half century, are reticent to embrace data and prefer to continue traditional instruction methods.[11] But data according to Paterson, New Jersey Diocese School Superintendent John Eriksen is just another way to 'show your work.' Catholic schools "need to be able to credibly measure whatever they are claiming to do. They need to be able to define whatever the return on investment is and how they'll measure it."

The choice of metrics is particularly vexing in the Catholic setting because Catholic schools attempt to do far more than bring about documentable learning outcomes. Cognitive outcomes aside, Catholic education aims at the character, if not at the spiritual center, of each student within its purview. Before implementing blended learning, Catholic schools must first seek to define the Catholic school's mission and vision.

This formative process is crucial to the success of the entire agenda for building Catholic learning communities, crucial because it sets out what success will look like across the

whole topic domain and shapes how goals will be measured and calibrated on subordinate metrics. After its core mission and vision are locked into place, a particular institution can utilize the resulting flow of data to design new objectives or refine existing ones. Done well, the interlocking goals and metrics promote both institutional stability and innovation.

Consistent metrics and an overriding commitment to mission reassure community stakeholders – including parents, students, faculty, administrators, and donors. These metrics also produce evidence that can be used to sell the institution's strengths. But consistent metrics also provide a base for innovation and experimentation, as weaknesses are identified and addressed. For Catholic educators, a Catholic school is much more than the sum of test scores and statistical models. Mission and metrics should be adapted to the needs of institutional identity. The Catholic tradition and the local needs of the students and other stakeholders inform the mission and help to define success.

What does lie at the center of Catholic K-12 schooling? Archbishop Donald Wuerl of Washington, D.C. has usefully identified four 'pillars' of Catholic education: Catholic identity, academic excellence, affordability and accessibility. These four will be used as touchstones throughout this report.[12]

- **Catholic Identity** – a values-based community and curriculum welcoming to all and grounded in knowledge of the authentic teaching of the Church.
- **Academic Excellence** – high educational achievement in outcomes and scores.
- **Accessibility (or Sustainability)**[13] – the ability to deliver quality education to needy students and communities consistently and over time.
- **Affordability**—Effective and efficient resource management to keep costs low for parents and stakeholders.

These four pillars can help to inform the development of mission-based metrics for Catholic schools.[14]

Catholic identity cannot be captured exclusively by standardized tests or quantifiable indicators and will require more art than science – what is known to Catholics as 'discernment' – to identify and execute. Fortunately, this mission has been a priority and a success in the Catholic model for nearly a century.[15]

Blended learning can enhance this identity on a number of fronts. First, character education modules, developed in charters, allow Catholic institutions to track value-based metrics and lead school-wide improvement. Second, Catholic religious instruction has begun to migrate to online formats so that religious instruction can be integrated into a comprehensive academic platform. Third, blended learning serves a "core Catholic tenet" by increasing student-teacher interaction and emphasizing the individuality of each student, according to Fulcrum Foundation's Joe Womac. Finally, such an approach implemented with a sturdy business plan offers many Catholic schools an alternative to the bleak choice between the conversion to secular charter and the closure of the school.

Excellence – Catholic schools have earned a reputation for excellence in education. Decades of research demonstrate that Catholic school participants outperform their public school counterparts on test scores, college matriculation and graduation rates, lifetime earnings and upward mobility. But according to Superintendent John Erikson of the Paterson Diocese Schools, that excellence is often assumed but rarely proven, "[Catholic schools] don't collect data, we don't meaningfully analyze the data we do have, and we aren't transparent about it."[16]

This dearth of data is striking when viewed alongside the growing transparency and accountability metrics instituted in charter schools. Student performance and outcomes are tracked rigorously and trumpeted by successful charters as evidence their model is delivering on their promises. Excellence for Catholic schools requires strict data metrics and academic goals for student achievement, not through infrequent standardized high-stakes testing but through continuous mastery-based exams. Blended learning, as this study will show, collects this data in a feedback loop so interventions and progress are available in real-time. This adjustment-based model promotes transparency and accountability for stakeholders through data.

Sustainability – Reform at Catholic schools has to start with the business model. For philanthropist Leo Linbeck, "The business model is fundamentally broken. The education model is much better than traditional public schools but with charter competition even that advantage is shrinking."[17] Catholic schools in low-income areas, that Archbishop Wuerl emphasized must be open and accessible to all students, cannot rely on tuition hikes to cover costs without driving enrollment down further.

Blended learning tackles both the cost and the revenue side of the business model. By leveraging technological tools, labor costs (70-80% of school budgets) can be reduced since blended learning models require fewer and less expensive staff than traditional school models. The nationally-renowned blended learning charter Carpe Diem Collegiate High School has successfully brought per-pupil-costs down to $5,300 – half the national average and two-thirds cost of other high schools within the same school district.[18] For St. Therese elementary school in Seattle, this model has driven up enrollment (and revenue) by luring parents with low tuition and a technology and customizable curriculum. [19]

Donors will have to be part of the equation for many low-income schools but they "don't come in to plug structural gaps," according to Linbeck. Philanthropists want to 'invest' in a school, help them reach a point of equilibrium – not bail out a sinking ship in perpetuity.

Affordability – All things being equal, Catholic schools are a bargain. The per-pupil-cost is 10-20% lower than public schools and the direct tuition costs to parents is lower still, sometimes as much as 50% below the real cost of educating a student.[20] But all things aren't equal because, according to John Eriksen, "[Catholic school] parents are being asked to pay twice to educate their children, first through taxes then again in tuition."[21] If these students were not enrolled in Catholic schools, the public schools would have to accommodate them at no cost. This amounts to $21 billion per year in averted costs to the public schooling system by the Catholic Church, its students, families and benefactors.[22]

Before the rise of charters, Catholic schools had to demonstrate value above and beyond the free but inferior good of a public education. As charters now offer an education of comparable quality for no cost, Catholic schools have to demonstrate value relative to charter schools as well as traditional public education. Parish subsidies and private philanthropy can help to subsidize tuition through scholarships but Catholic schools have to compete on cost as well, according to Eriksen, "We need to reduce our costs to be competitive. I don't know of another way other than the blended model."[23]

Targeting reading interventions using real-time data on individual students' strengths and weaknesses is an important advantage of a blended learning approach.

Blended learning not only reduces direct operating costs like labor, it also provides struggling schools with better financial transparency tools to track student outcomes and resource efficiencies.

The reforms to the business model and education model of Catholic schools required under blended learning enhance these 'four pillars' by more effectively and efficiently deploying resources and providing credible evidence of success to stakeholders.

III. COLLECTING DATA: A NEW MODEL FOR LEARNING

Blended learning emphasizes outcomes over inputs. By de-emphasizing inputs, these institutions focus on evidence-based techniques and continuous improvement. Catholic schooling has a unique advantage over the bureaucratic public education model that can be leveraged by adopting blended methodologies. Student outcomes, parent satisfaction, teacher performance and other key metrics become the focus of the school's short term and long term objectives without the needless and often counterproductive obsession over inputs.

The public education system, in contrast, resembles a checklist approach to education reform as inputs are carefully measured and used as 'success' metrics. Dollars per pupil, teacher to student ratios, and standardized test preparation time allotments skew institutional priorities as schools move from one crisis or cure-all to the next instead of striving for continuous improvement.

To be certain, some inputs can make a major difference, like having a fully-developed and implemented curriculum. But this checklist model ignores the fundamental purpose of the institution and is akin to quizzing a pastry chef about the ingredients, proximity of work stations, and baking time without taking into account customer satisfaction and restaurant success. Does the butter-to-egg ratio matter if the diner is sated and the restaurant is profitable and well-reviewed?

Testing the Catholic mission to provide a high-quality academic and moral education to children of all backgrounds against the results shows the limits of the current schooling model. Blended learning, when properly implemented, can provide a high-quality individualized education at a low cost on a sustainable basis.

Under the 'factory model,' students are treated as interchangeable parts and are expected to complete every lesson within arbitrary time limits. Students who fall behind are pushed further back as the regimented pace of instruction marches forward in step with bureaucratic mandates and time sensitive markers. After school tutoring and summer school can fill the gap when teachers notice and act on a student's trouble grasping material but often that occurs weeks and months after that lesson plan has been covered for the rest of the class.

By the end of the school year, teachers and parents face a dilemma – either promote a struggling student to the next level or retain the student in the previous class. This problem becomes more acute when the student's scores are right above or below the mandated threshold for intervention – without a substantial indication of action.[24] Advocates and opponents of grade retention policies recognize they are only debating how to apply the rigid education model to low achievers.

Instead, blended learning individualizes instruction and benchmarks progress against the student's own needs and capabilities. Students become the center of the classroom and teachers serve as facilitators, directing and supplementing learning continuously. Students learn both at home and at school through online platforms that guide learning and track results.

Blended learning has four different types as identified by the Innosight Institute: rotation model, flex model, self-blend model and enriched-virtual model.[25] Although each type differs in application and time allocation of lesson delivery and in-person instruction and group activities, all blended models use technology to complement the strengths of traditional education without the strict time and place requirements of the 'factory-model.' Since mastery of a concept is tested with great frequency, students only advance from lesson to lesson once the previous topic has been satisfactorily mastered.

> "For years we in the education community talked about data as important, while struggling with the real challenge of making the data useful. DC Prep is facing this challenge head-on"
>
> -Pru Hallarman, Assessment Associate, DC Prep Public Charter School

Blended learning takes this focus on mastery a step further and guides intervention immediately by pacing student learning according to the student's ability. This customized approach gives teachers the ability to see their entire class' progression in real-time and the students the ability to focus on more difficult areas longer and intensely and demonstrate mastery of simpler topics more quickly. A student struggling with a geometry lesson on Monday can be ahead of the curve on their science lessons and devote additional time at home or school to geometry. Teachers can better allocate their time to those students who require it the most, which will change over time, as different concepts challenge students differently. Curriculum is mapped to align with specific content standards and mastery goals, and students can learn at their own pace. Students still learn the requisite material but the process is not as tightly regimented as the factory model.

Achievement Soars, Costs Plummet

As Cardinal John O'Connor implored the Mayor of New York in the mid-1990s to give the Archdiocese New York's lowest performing 5% of students, Catholic schools have prided themselves on an ability to educate every child.[26] The dual pressures faced by

urban schools of limited resources and declining enrollment put that mission at risk. Two charter school groups show that blended learning can produce high-performing schools for student populations that have struggled elsewhere.

In Yuma, Arizona, Rick Ogston founded Carpe Diem Collegiate High School, which serves grades 6-12, utilizes a 'flex model' for blended learning. Students learn on a fluid and individualized lesson plan with the teacher of record onsite. Teachers and assistant coaches run specialized interventions, seminars, and group projects as well as direct instruction to supplement the online learning modules.[27] The online content is computer adaptive instruction (CAI) that records lesson progress and mastery through short quizzes and comprehensive tests. Content progresses as the student masters the topic, and teachers and other faculty devote their time to special lessons that supplement and complement the online learning.

At San Francisco's Mission Dolores Academy, blended technology enables the school to capture real-time information on students' mastery of specific lessons.

Yet for all the technology-delivered instruction and personal and small-group interaction that students receive, this high-performing school costs half as much per pupil as the national public school average at about $5,300. Its per pupil cost is about half the average cost per pupil for Catholic high schools.[28]

Carpe Diem is based on a "new pedagogy…that is committed to the unqualified success of today's technology savvy student, regardless of ethnic, disability or socio-economic status." With 42% Hispanic students and fully 60% of the students qualifying as low socioeconomic status (SES), Carpe Diem is out-achieving Yuma County and Arizona in both reading and math scores with over 90% of its students achieving state-level proficiency or advanced marks in reading and math. Carpe Diem's kids are not special or admitted based on their achievement – in 2005 before the school adopted blended learning the school scored at or below county and state-wide averages for math and reading.[29]

A network of charters called Rocketship Education in San Jose, California is achieving similar excellence at a lower-cost for K-5 students. Like Carpe Diem, Rocketship's students are from traditionally underserved populations – 86% of Rocketship's students are

English Language Learners (ELLs) and 88% qualified for free or reduced lunch.[30] For ELLs, Rocketship uses English-language Rosetta Stone software so their lessons in English and other subjects involve technology and data. For other subjects, students use adaptive computer software that tracks progress and provides data to instructors. Teachers can turn that real-time data into useful information for continuously adapting lesson plans and modules to student needs.

All three of Rocketship's charter schools (two more opened in Fall 2011) are among the top 10 schools in the Santa Clara School District serving low-income students.[31] Like Carpe Diem, Rocketship creates efficiencies through technology. Each school saves $500,000 a year in instructional costs and can afford to compensate its teachers better than other local public schools.

Charters are not the only ones innovating in blended learning. Mission Dolores Academy (MDA), a Catholic K-8 school in San Francisco, opened its doors in fall 2011 and the early results are promising. Average math scores rose from 43% grade level proficiency to 59% in one year. Reading scores also showed substantial improvement rising from 43% to 49% in the first year.[32] At the same time, operating costs have plummeted on a per-pupil basis from $9,800 before blended learning to $8,700 today and are projected to fall again next year by another 10%.[33]

Matt Bowman of Seton Education Partners, who leads the blended learning initiative at MDA, says some of the most challenging students thrive under blended learning, "what we have seen is that it helps certain students learn better. High-energy, easily distracted boys in particular seem to benefit; these kinesthetic learners can interact with digital content and get immediate feedback in a way impossible in a normal lecture-type class. They no longer have to sit still for hours on end, they rotate from station to station every 20 minutes and can really engage with each lesson."

Rocketship and Carpe Diem do this by reducing the reliance on staffing costs yet increasing the amount of time a student has to interact individually or in a group with an educator. With fewer teachers conducting large lectures to classes, the teacher can focus on individual

Mission Dolores Academy, Student Achievement Gains 2011-2012

Bar chart showing Reading (ITBS/NWEA): SEP 43%, JUN 49%; Math: SEP 43%, JUN 59%
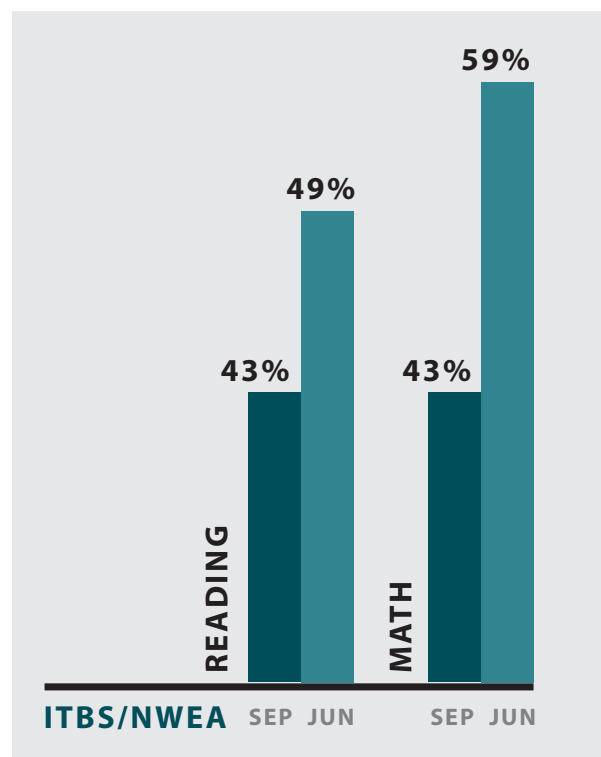
RECRUITING AND RETAINING HISPANIC FAMILIES – CAN BLENDED LEARNING MEET THE CHALLENGE?

"Of the 1500 Catholic schools that closed in the last decade, 1450 would have stayed open if we could have successfully recruited Hispanic families."
– Fr. Joe Corpora C.S.C., Director of the Catholic School Advantage,
Notre Dame's Alliance for Catholic Education (ACE)

For Catholic schools, the growing Hispanic population is a great opportunity for renewal. Only 3% of Hispanic parents send their children to Catholic schools despite being overwhelmingly Catholic. These students are often overrepresented in the same urban areas where declining enrollment is shuttering century-old Catholic schools. The students are there, they have greater needs for English Learning curriculum that are not being well-served by public schools.

According to Erika Cedrone of Catholic Schools Foundation – Boston, a student in a Spanish-speaking household matriculating into a Catholic school is, on average, two grade levels behind their peers.

For Rocketship Academy in San Jose, blended learning methods through immersion and technology have raised its scores to the top tier in the state. Scott Hamilton's Mission Dolores Academy uses digital learning software in Spanish to catch students up and transition them to English-only curriculum.

English Language Learners would benefit most from the customizable nature of a blended learning model – allowing students to succeed in some modules while working on mastery in others.

But learning is not the biggest obstacle for Catholic schools recruiting and retaining Latinos – it's information. A survey of Spanish-speaking churchgoers with children revealed that 45% of the parents did not know where the nearest Catholic school was even though it was steps away from the parish. Most parents also believed Catholic schools were for the 'elite' and assumed tuition to be unaffordable.

Father Joe Corpora, C.S.C. says that Catholic schools need to become more culturally responsive to better attract and serve Latino children and families. Latino parents often require a personal connection with teachers and the ability to make use of extended family resources to make up parental volunteers hours and other obligations to schools.

needs as other students independently work on projects based on their own lesson plans.

Data enables this real-time intervention to take place and adaptive lesson plans to be constructed. Student mastery is collected at regular intervals on various qualitative and quantitative metrics so teachers and other faculty can react and adapt future learning based on the student's customized results. If a school collects this data, it can use it successfully. KIPP co-founder Scott Hamilton, now a Managing Partner with Seton Education Partners, which is committed

High-energy, easily distracted boys in particular seem to benefit; these kinesthetic learners can interact with digital content and get immediate feedback in a way impossible in a normal lecture-type class.

to turning around Catholic schools through blended learning, argues that blended learning can drive down the per-pupil cost because it reduces the need for as many teachers.[34] Since labor is the largest cost of any school, increasing the number of kids in a classroom reduces the per-pupil costs dramatically. Philanthropist Leo Linbeck notes, "the challenge of going from 20 to 40 kids is not the classroom management – nuns did that for years. It's the grading. It's the data. It's the management of the process. That's where blended learning comes in."

Teachers normally spend a large amount of time simply managing data, a task that technology can expedite. For Hamilton, who is implementing blended learning at Mission Dolores Academy in San Francisco and St. Therese in Seattle, "the rotational model means more small group learning—which teachers love."[35] Students can take a lecture in one subject for an allotted time, take a short quiz and rotate to a small group activity on a different subject or for one-on-one tutoring as needed. For Joe Womac of the Fulcrum Foundation, another advantage is the personal attention students get when they break into smaller groups and away from lecture formats, "it increases human interaction and individuality for kids."[36]

IV. APPLYING DATA: DEPLOYING STRATEGIES FOR CONTINUOUS IMPROVEMENT

Blended learning models produce rich, real-time data that can be much more meaningful than cumulative and standardized exams administered at regular but infrequent intervals. The difference for educators is the difference between a still photograph and high-definition video footage. Both tell the audience something about the subject but the interpretation can be very different.

To avoid data overload, blended learning platforms utilize innovative dashboards to make student data more, "Triple A – accurate, accessible, and actionable." Successful application of blended learning data requires attention to interpretation and use.

Education Elements, a leading blended learning software developer, illustrates a retention trend-line for a class of students with an illustrated average of lessons completed over time. Students achieved at different rates, as some accelerate quickly others catch-up in a matter of weeks and at points the entire class' progress slows. This data also promotes teacher and parent intervention as individualized results can be tracked for a student across subjects, time, and other variables.

Data-driven schools like DC Prep, a charter school in Washington, D.C. often employ data instructional coaches, to assist teachers in interpreting the data on individual students and

MAKE YOUR DATA TRIPLE A – ACCESSIBLE, ACCURATE, AND ACTIONABLE

DC Prep, a charter school management organization with three campuses throughout underserved areas of Washington, DC, is leading the way on using data to improve performance. Regular monitoring of student progress ensures an academic program that is rigorous, targeted, and suitable for every child. DC Prep uses a variety of nationally-recognized assessment tools, selected for their validity and developmental appropriateness.

Partnering with the non-profit Achievement Network (ANet), DC Prep administers 'interims' or periodic standardized tests to track student progress. The exams are administered four times annually on Mondays and Tuesdays and, within a day or two, DC Prep's data team works with faculty to crunch the numbers and track individual student performance. This process is done in conjunction with "Lumos" – DC Prep's customized data integration platform that provides teachers with real-time information on students' academic progress on formative and summative assessments – to make the data Triple A: Accessible, Accurate, and Actionable.

At DC Prep, interim results are 'cleaned' and then disaggregated by grade level, subject area, and other identifiers to decipher patterns and then compared against state-wide assessments. Each campus' academic team, which, depending on the grade level, includes department chairs, grade level leads, and other school leaders, sits down with the data to identify student achievement trends, goals, and shortcomings. On the Friday after interim assessments are administered, teachers have a professional development 'Data Day' where department chairs lead seminars with the faculty to analyze the results and build action plans around them for individual students. Based on campus-specific priorities, teachers develop lesson plans, reteach methods, and strategy goals for the coming instructional period. Grade level leads and department chairs follow up to check on teachers' progress in implementing their action plans in the classroom.

According to DC Prep's Assessment Associate Pru Hallarman, who leads the data analysis, "The model is not blended learning per se, since data is acquired through traditional methods, but DC Prep as an organization is using technology to collect the data faster and more accurately. Lumos is an instrumental part of this process; the platform enables faculty to plan instruction in a flexible, tailored way based on individual student needs as well as class- and school-wide trends."

This commitment to data-driven results won DC Prep the Achievement Network's Education Impact Award – the first and only award to be given out by ANet DC, for DC Prep's improvement in results for grades 3 through 8, best practices in data-driven instruction, as well as its overall contribution to the ANet network through sharing best practices with other schools. The award was given to the entire DC Prep organization, across each of its three campuses. DC Prep's Edgewood Middle Campus also ranks as the number one public charter middle school in DC, and second best overall middle school in the nation based on the 2011 state assessment. In addition, its Edgewood Elementary Campus was selected as a 2011 National Title I Association Distinguished School Award – one of only two schools selected in DC – for its work in closing the achievement gap.

According to Ms. Hallarman, ANet's software has allowed DC Prep to gauge how students will perform long before the formal state assessments – a data-driven mentality that helps to take the surprises out of standardized testing.

classroom and school-wide trends. Based on test results, classroom observation, and other metrics, the data coach tracks student performance and aids teachers with lesson plan preparation and customization to the needs of students and the class.

In addition to these coaches, blended learning software platforms organize and interpret the data with teachers and administrators and help them to organize differentiated learning. The reports that platforms developed by innovation leaders like blended learning designers Education Elements. Proficiency scores in different subjects, concepts and

These graphics, prepared by leading blended learning designer Education Elements, demonstrate how learning plateaus for individual student can be increased with accelerated learning in a blended setting. Note the increased number of modules completed (on the vertical axis) in the second slide, over the same time period.

Current Learning Progress
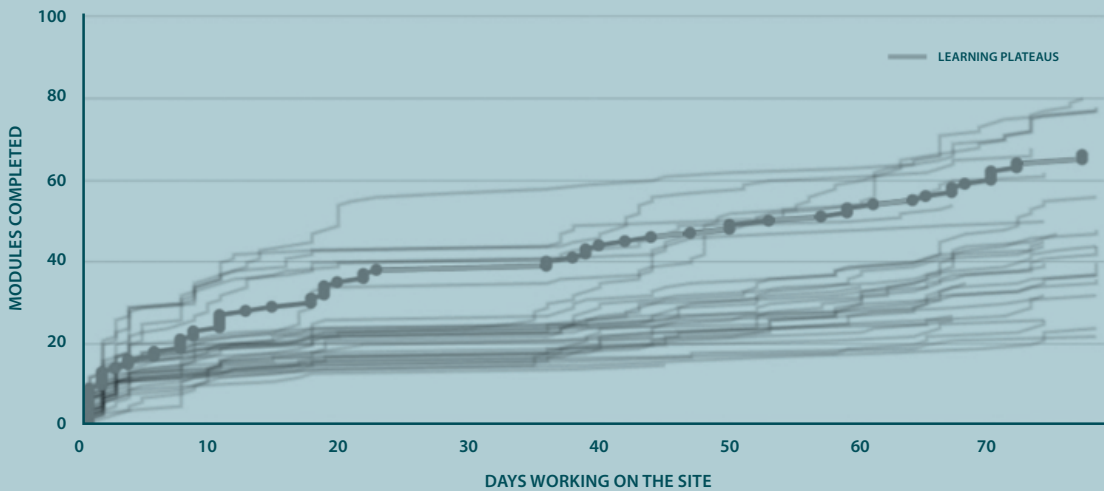
Khan Academy - Progress Report

Accelerated Learning
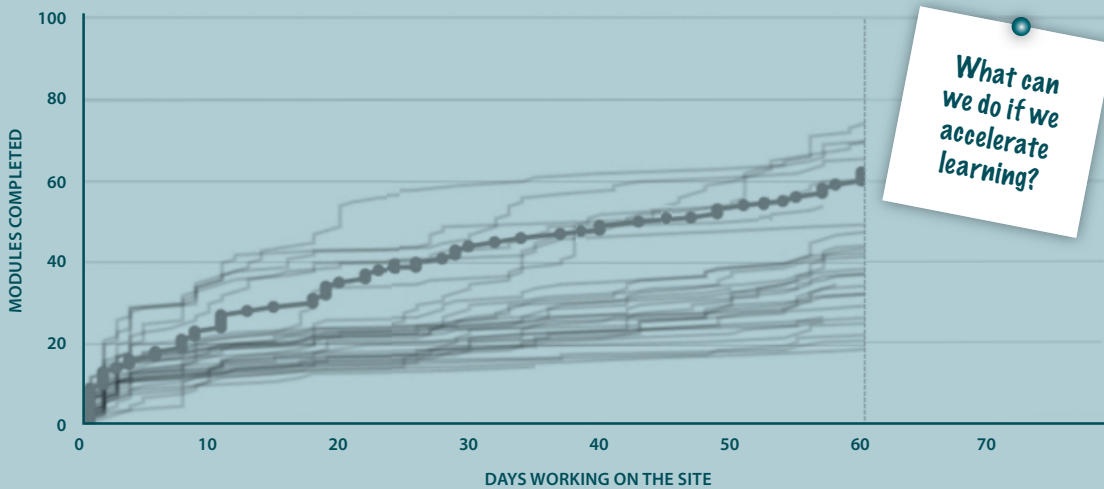
Khan Academy - Progress Report
with Shorter Feedback Loop

suggested lesson modules are presented in user friendly formats.[37] According to Seton Education Partners' Scott Hamilton, the next generation of software platforms will go a step further and make suggestions for interventions and future lesson plans based on the data.[38]

Engaging Parents

Real-time results from in- and out-of-school learning have an application especially valuable for low-performing schools and their students: the ability to engage parents in a meaningful way. In the factory model,

Technology is driving a significant transformation for Seattle's St. Therese Academy, making it the first blended technology learning Catholic school in the Northwest.

parents hear from teachers and administrators through formal written communication like report cards and at semi-annual parent-teacher conferences. Outside of these interactions, parents only hear from their child's teacher when a discipline or academic problem has become serious enough to require action. These are generally not positive interactions.

Under a blended learning model, the parent can access almost as much as the teacher does about their child's performance. Scott Hamilton plans to implement weekly digests at Mission Dolores Academy that update parents on student performance and make suggestions about how that parent could best help in their studies.[39] For a single parent working two jobs, short on time and money, the ability to know that an extra hour over the weekend on right triangles would provide real value-add to their child's achievement would give them an unparalleled opportunity to engage both effectively and efficiently with the school. High-quality and real-time data empowers parents to fulfill "the first responsibility for the education of their children" under the Catholic Catechism.[40]

Erika Cedrone of Catholic Schools Foundation (CSF), Boston found out how to use blended learning models and other technologies to engage Spanish speaking parents in their children's education. A Spanish-speaking mother and her daughter make a trip to the library. The daughter logs on to complete an eLearning module including a quiz on reading comprehension in English. The daughter then has to explain the story to her mother in Spanish and discuss what she learned. The classroom teacher, who does not speak Spanish, sends the mother emails in Spanish via Google Translate and the mother replies in English through the same software.[41]

Data in these cases can produce results, transparency and positive dialogue.

Religious and Character Education through Blended Learning

Another priority for Catholic schools is including a character formation component into a blending learning platform. DC Prep offers a model called "Do the RIGHT Thing." The acronym RIGHT stands for traits the kids are expected to exhibit (Respectful, Intellect, Genuine, Hardworking and Team-work). Each of these traits is further broken down into specific behaviors like following directions and respecting physical space. Using an incentive model much like a merit-demerit system, students are awarded 'responsible or irresponsible dollars in a token economy.'

"The students have more meaningful interactions because they know the adults in the building care about each and every one of them and their souls. The smaller-group instruction enabled by blended learning enhances that connection. It's very powerful."

-- Matt Bowman, Mission Dolores Academy

Teachers track the students dollar count and are encouraged to award them in a 4-to-1 ratio, so the most well-behaved and problematic children are encouraged proportionally based on their behavior. The school's data analysts aggregate the data and look for patterns and trends each month. The administration creates a behavior goal and establishes an implementation plan for the following month, on a continuous improvement basis. [42]

Blended learning has also entered the religious instruction space. Sadlier, the publisher of the *We Believe* series of Catholic texts, has launched an online assessment tool in May 2012. According to Sadlier:

> "This system allows teachers to customize practice pages and tests that can be printed or used online; choose from interactive, automatically scored, and pre-formatted program tests; assess students securely online and provide them with immediate feedback; and track students through a comprehensive reporting system that provides detailed reports on the class or on individual students."[43]

The Archdiocese of Washington, D.C. along with a number of parish schools in New York City is currently exploring the online-based curriculum for its religious schools and parish-based Catechism courses.

Blended learning itself promotes the Catholic mission of Mission Dolores Academy in San Francisco according to Matt Bowman, the lead on implementing the program for Seton Partners, "The Catholic and blended models together have a positive impact on the student community outside of academics. The students have more meaningful interactions because they know the adults in the building care about each and every one of them and their souls. The smaller-group instruction enabled by blended learning enhances that connection. It's very powerful."

In addition to the school's religious identity and program, which includes a weekly Friday mass, the academic format contributes to a safer and better school environment. "Since the kids are engaged with their lesson, discipline is much less of an issue. Problems, even common at other charters and public schools, just don't come up. We don't have a line outside the principal's office or kids running down the halls," observes Bowman.[44]

IV. COMMUNICATING DATA: RE-BRANDING CATHOLIC SCHOOLS

The brand image of Catholic schools is strong as a traditional, reliable purveyor of a standard education coupled with strong discipline, a safe environment, an aggressive sports program and a commitment to the development of character. Enrollment decline, charter school competition, demographic shifts and the disappearance of the religious from the schools have steadily frayed this image around the edges. Although the Catholic brand has not substantially changed, the marketplace has. "It's no longer 1968," says Seton Partner's Scott Hamilton, "Catholic schools don't know how to sell themselves and market their success."[45]

On this issue, charter schools have one great strength that public and Catholic schools rarely exhibit – successful marketing. Colleen Dippel, Founder and President of Families Empowered, a school choice advocacy group in Houston, says that Catholic schools should learn from the experience of charters. "You have to go out into the community that you want to serve and never stop recruiting. That goes not only for parents and students but also for faculty. Have your parents and students act as ambassadors to their neighbors and friends."[46]

Assuming that blended learning has been successfully implemented and has borne fruit in differentiated instruction, elevated outcome measures, and continuous improvement in instructional approaches, a major challenge remains: to communicate these successes to the marketplace. Catholic schools must re-brand themselves, and they must use credible data about both process and outcome. Blended learning can be a helpful part of that rebranding and give schools the tools to 'sell their success.'

A Communication Failure

As Catholic urban schools decline, parents in the same neighborhoods are lining up to enroll their children in charters. Charters – barred from selectivity practices – use lotteries to mete out placements. The 2011 film "The Lottery" dramatizes the excitement and disappointment these prospective charter parents and students feel.[47] The news accounts rarely dwell on the irony of the availability of placements at nearby Catholic schools that deliver equal if not better outcomes for their students.

Some Catholic schools have even been converted to charter networks by the dioceses and religious orders in hopes that the charters can continue to provide the high-quality

education that, for lack of resources or other constraints, the Church could not sustain. This often painful process played out in both Washington, D.C. and Indianapolis as Catholic schools shed their religious identity to keep their doors open.[48]

The sharp drop in Catholic enrollment over the last decade, even in the face of the rising need for high-quality urban schools, can be partly attributed to the relative costliness of Catholic schools as compared with 'free' public and charter alternatives. A clear part of the reason is that Catholic schools either lack the ability, the information, or the willingness to develop new brand images and engage in direct efforts at marketing with re-branded identities.

According to a 2008 study commissioned by the William E. Simon Foundation, most parents in Jersey City, New Jersey had a higher opinion of Catholic schooling than public schools and believed they could afford

"Catholic schools in the Archdiocese of Washington are committed to using sound data to inform instruction. Next year we begin using a criterion referenced assessment system that will provide teachers real time data on student achievement five times throughout the school year. The assessment in reading, math and religion is tied to archdiocesan standards as well as the National Common Core. Test data will provide teachers and parents updates on student progress for each learning objective in all three core areas of instruction. This data will focus our efforts on continuous improvement so that all students achieve at their highest potential with personalized academic plans that guide and direct instruction."

--Deacon Bert L'Homme, Ph.D., Superintendent for Catholic Schools, Archdiocese of Washington

the tuition but the local parents could not name their neighborhood Catholic school.[49] "Supply was available and there was latent demand," according to Stephanie Saroki and Christopher Levenick of the Philanthropy Roundtable but the Catholic schools were not communicating with parents.[50] Others, like the Spanish-speaking parishioners in Boston Erika Cedrone surveyed, may harbor misconceptions or have little to no information about Catholic schools.

A study by the Speciality Family Foundation found that "when inner-city Catholic schools are promoted effectively, it increases enrollment and improves fundraising."[51] The principal of Saint Stanislaus School in East Chicago, Indiana learned this when she decided to invest $90 in a local radio advertisement when school vouchers became available to students in her school. Class sizes greatly increased and desks had to be taken down from the attic and placed back in classrooms.[52]

For Catholic schools, demographics also impact demand. Contrary to the perception that there has been an exodus of Catholic families from urban areas, growth in the largely Catholic Hispanic community is an untapped resource for Catholic schools with flagging enrollment according to Father Joe Corpora C.S.C. of Notre Dame who leads an effort to recruit Hispanic students into Catholic K-12 schools.[53] Although Hispanics make up the lion's share of school-age Catholics, only 3% of Hispanics are enrolled in Catholic schools.

Recruitment and Retention

Charters' success at recruitment has been a case-study in marketing. Charter schools in Arizona maximize their enrollment through traditional marketing campaigns including billboards and TV commercials.[54] The Colorado League of Charter Schools and other consortia provide charter school administrators with how-to guides for marketing their schools.[55] The marketing materials are explicit – sell your school based on your success or the potential success of your school. Charters tout their achievements in flyers dropped off at drug stores, in open town halls, and other venues. Charter marketers counsel, "use data-based details and facts to back up key messages."

Before schools can recruit, they need to collect, tabulate and interpret data on enhanced learning outcomes and then shape the results into a value proposition that they are committed to delivering to the marketplace. For Catholic schools, data collection and transparency present a challenge to be overcome. In doing so, schools can improve recruitment. Russell Carson, the co-founder of the Endowment for Inner-city, discovered that the Archdiocese of New York had been claiming a 99% high school graduation rate. For Carson, it was too good to be true –because it wasn't true. After questioning the information, the Archdiocese revised its estimate to 80% – still an astounding figure when coupled with the fact that 95% of those graduates went on to college.[56] Yet this downward revision – still remaining an estimate – clearly weakens the schools' credibility and bespeaks an inadequate data infrastructure.

In addition to having the wrong data, some Catholic schools have no data or data without much value. Superintendent of Paterson Diocese Schools John Eriksen recognized that comparative and test-based data "has marketing value." He instituted school 'scorecards'
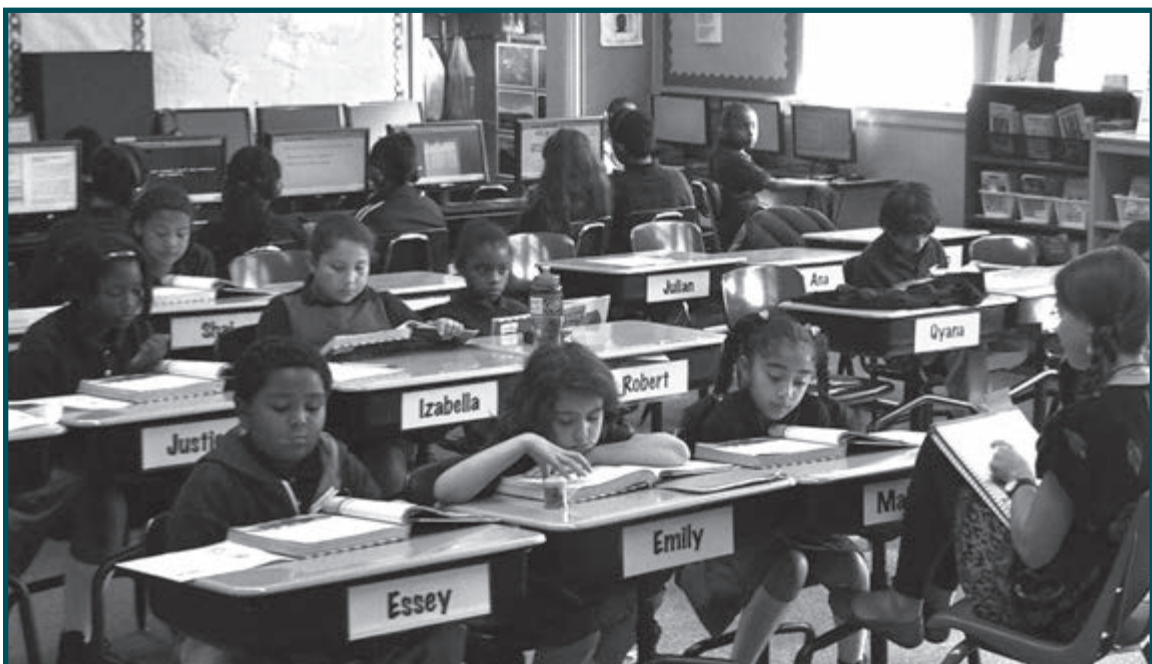
that profile each school in the diocese in a transparent way. Eriksen says Catholic schools "have to be able to compare ourselves to charters and public schools. Parents don't want to know how their kid's scores compare to a national average. They want to know how their kid compares to the neighbor."[57]

> "There's billions out there in private philanthropy for Catholic education, there's just no money to fill structural deficits."
>
> – Leo Linbeck, Philanthropist and Chairman of Families Empowered

For standardizing testing, Catholic schools that do use tests often use ones that differ from their local charter and public school competitors in the choice of test formats and results. Parents need useful information to compare 'apples to apples' results according to Christine Healey deVaull, of the International Education Foundation. If the schools collect and decipher the data and present it to parents and students honestly and clearly, they can show their success and develop a marketing platform based on that.[58] According to the Philanthropy Roundtable, "high performing inner-city Catholic schools have nothing to lose, and everything to gain from letting their successes be known."[59]

Retention is also a key component of maintaining robust school enrollments. Erika Cedrone of CSF-Boston observes that when a family leaves a Catholic school, they often take two other families with them.[60] John Eriksen argues that Catholicism is a "very market driven entity, we shop for homilies and music liturgies all the time." Parents and students are customers and schools that cannot get repeat customers are fighting a losing battle.[61] In the era of charter schools, Catholic schools cannot afford to "coast on an academic reputation they may not be living up to" according to Bill Cooper, a donor and advisor to Ascension Catholic Grade School in inner-city Minneapolis.[62] In other cases, the Catholic schools may deserve their reputation but be unable to provide evidence in support of it.

A Value Proposition

Affordability may be a factor in the declining enrollment at Catholic schools but, as in Jersey City, many parents simply lack the information to make a large financial decision. Data and proper communication of successful learning outcomes is crucial to recruitment. That same data can be used to sell the success of Catholic schools to donors, stakeholders including policymakers and parishioners, and potential partners like universities and employers. Blended learning offers special value in recruitment and retention of tuition-paying students at Catholic schools. With customized lesson plans, built-in intervention, and a continuous improvement model in place, parents can be recruited through targeted data metrics based on expected outcomes and retained based on personalized results.

The technology-heavy curriculum has also been a powerful recruiting tool at Mission Dolores Academy. According to Scott Hamilton, "poor parents were very interested in the school's specialty of computer learning, since that strikes most sober parents as a very good, marketable job skill that will serve their children well later, never mind how it might now help their math skills."[63]

This is crucial with tuition costs in play as a factor in parents preferring charter schools to Catholic alternatives. Catholic schools not only have to out-perform dismal public schools but have to show value above and beyond that of a 'free' charter school nearby.

Blended learning can be leveraged to show direct value-added equal to or greater than the cost of tuition to a parent. Joe Womac of the Fulcrum Foundation believes that when parents see where their tuition money is going and how much is coming from other sources such as tuition assistance and parish subsidies, they will be better equipped to recognize the value of a school's tuition. With cost metrics married to excellent outcomes, Catholic schools can directly justify their costs to parents.

Direct marketing and segmentation of parent needs can help to identify who in the community the school can best serve and demonstrate to those prospective parents through promotional materials how the school will help their child achieve their goals – be it college attendance, high school graduation, school discipline and character formation, or strong Catholic identity. Colleen Dippel of Families Empowered emphasizes "beyond marketing to the community they need to understand the community. They need to know what parents want and why they are looking elsewhere."[64] Schools need to identify what parents want and speak to those desires. Catholic schools have many of the tools in place but require means to quantify and present that information in the school marketplace.

Blended learning data can improve more than just instructional outcomes. It can help to make Catholic schools stronger as incubators of values, more affordable and establish long-term sustainability.

Stakeholders and Development

Catholic schools, especially those in urban areas, cannot solely rely on parents to offset the cost of educating their students. The diocese (or Religious Order), local parishes, and other policymakers play a role in financing Catholic education. These non-parent stakeholders need to be 'sold' on the benefits and value of Catholic education.

As John Eriksen, superintendent of Paterson, New Jersey's Catholic schools, notes serving poor children is no longer enough to secure long-term and sustainable investment. Instead, Catholic schools must imagine themselves as investment-grade enterprises with a high-quality product. Eriksen suggests that "a much more effective mantra than 'We're poor, give us money,' is 'We serve the poor. Invest in us, and we'll provide a good return on your investment.'"[65] Since tuition revenues only cover about half of the real pupil spending by Catholic schools, outside revenue sources must play a large role in investing in academic success, maintaining Catholic identity, and the affordability and sustainability of these schools.

Since parishes are the most direct source of support for most Catholic schools, parishioners need to be engaged through governance structures and data transparency. Church newsletters and community events afford an opportunity for schools to tout their successes directly to those in the community who have supported schools in the past. Joe Womac emphasizes the importance of "complete buy-in and commitment" from the supporting parish if a new educational model is going to succeed.[66]

Alumni and their families have a personal investment in the continued success of the schools they attended. According to the Philanthropy Roundtable, 82% of Catholic school alumni would contribute if asked.[67] Schools must not only ask but also show how that investment will produce results.

For policymakers, governance and academic success have to form a conclusive case for support and that case must be communicated clearly. As the Archdiocese of Washington has witnessed, those hostile to vouchers like the D.C. Opportunity Scholarship for Catholic schools already communicate directly with policymakers and threaten the program.[68] Without strong data, the position of these programs is tenuous. Opponents claim that these programs divert much-needed dollars from the public school system, a claim that only increases the pressure on Catholic schools to show that they are both achieving results and doing so in an efficient manner, especially in an environment in which fiscal pressures are constraining governments' budgets.

Another promising source of revenue is private philanthropy. Education donors

increasingly live by the mantra, "Trust in God, all others must bring data." As Superintendent Eriksen observes – donors now act more like investors and therefore must be shown a return on their investment. Dollars flow toward reform as Mark Zuckerberg's $100 million gift to Newark's schools demonstrates, but continued dollars flow toward demonstrated success with those reforms.

Donors reward those who can demonstrate, with continuous evidence, success. This has been a large part of the story of Mission Dolores Academy, a blended learning school in San Francisco, in securing private philanthropy.

Shown the success of blended learning at KIPP Empower Academy in Los Angeles, donors including the Gates Foundation and Walton Family Foundation have supported efforts at St. Therese in Seattle and Mission Dolores to implement blended learning. Father John Piderit, SJ says partners will "spend money on new ventures, but they have to have a high probability of success."[69]

Leo Linbeck, who recently raised $60 million in one month to expand KIPP schools in Houston, had a Catholic school superintendent approach him to do the same for them. He declined, saying "there is no money for propping up schools without a plan for sustainability."[70]

Partners and Personnel

The Cristo Rey Network has found another unique way to develop revenue and maintain affordability: ask students to work their way through school. Cristo Rey, started in Chicago, has grown quickly into a 24-school network that pays 65% of its per-pupil neighborhoods where parents have a limited ability to pay tuition. Every student is expected to work one-day a week at a company or nonprofit which in turn pays Cristo Rey between $20,000 and $30,000 for their student team's labor.[71] While in school those students are acquiring needed 'soft skills' for later occupational success. The school's commitment to academic excellence pays off. Although Cristo Rey's students come from poor to lower-income families, with 73% qualifying for free lunch, attend university and thrive there. In 2008-2010, 85% of Cristo Rey's graduates attended college, and 88% of those students 'persist' in their higher education.[72]

Cristo Rey's corporate partners get a student every day of the week, so the projects are not interrupted as the students rotate through – a flexible system ideally suited for blended learning's self-paced instruction. Students are earning part of their tuition and allowing the school to make long-term planning decisions and keep tuition low at about $2,350 in 2010.[73] Both the Cristo Rey Network and St. Columbkille School in Boston have developed university partnerships as well. Cristo Rey has worked with Catholic and private universities to improve their curriculum and guarantee their students access to post-secondary education. St. Columbkille leveraged the talents of the faculty of Boston College to improve the curriculum and recruit college students as tutors and faculty.[74]

At Notre Dame, Father Timothy Scully established the Alliance for Catholic Education (ACE) – a Teach for America-type program that matches new teachers with needy Catholic schools. The program places about 200 teachers in Catholic schools across the US annually and aids schools in recruiting high-quality, committed teachers.[75] Fourteen other Catholic universities have followed Notre Dame's lead and started similar programs that develop Catholic educators.[76] Blended learning promises to enhance these efforts through the infusion of technologically savvy teachers and data coaches with a commitment to Catholic education.

VI. CONCLUSIONS

This report acknowledges that many of the factors described as handicapping Catholic education will not soon disappear: the dwindling number of religious among Catholic school educators, the burgeoning minority and poverty populations within inner-city Catholic school neighborhoods with only limited abilities to pay tuition, and the diminishing financial and volunteer resources available within Catholic dioceses all present challenges that need to be addressed rather than ignored. But there are also ample reasons to remain optimistic. New educational models, blended learning chief among them, can help to address these challenges and sustain Catholic education for years to come.

1) High-quality blended learning promises savings in per-pupil instructional costs as much labor-intensive instruction is off-loaded onto digital sources. This per-pupil-cost reduction can improve the sustainability and affordability of Catholic schools. By increasing the value proposition for parents, Catholic schools can better compete against charter alternatives.

2) Integrating this approach fully into instructional practices provides improved targeted, differentiated or customized learning approaches that are sensitive to individual learning styles and preferences. Customization through technology is already demonstrating that all students can and do learn with the proper resources and support.

3) Blended learning allows economical access to a rich flow of data for formative and summative assessments, for communications with parents and other stakeholders, for school accountability and transparency, and as a basis for continuous improvement and innovation within the school setting.

4) Incorporating a combination of these blended learning best practices provides the opportunity for a potential 're-branding' of the Catholic school as a leading participant in cutting edge, innovative instructional approaches. This diversity of brand offerings increases the appeal of Catholic schools especially to low-income and Latino populations who may have differentiated learning needs. This growing demographic will be crucial to the future viability of the American Catholic school system.

Blending learning can advance Archbishop Wuerl's 'four pillars' of Catholic education if the Church and its schools show a commitment to innovation and sustainability. Since as Leo Linbeck notes, "Schools take on the culture of their faculty and their leadership. Blended learning only gets you part of the way there. The other part is commitment and execution by leadership."[77]

Furthermore, the traditional strengths of Catholic education – valuing students as individuals, expecting self-control and responsibility, the lack of educational bureaucracy, and staff commitment to a shared mission – are unique advantages for implementing the blended learning model. Finally, blended learning offers a path to sustainability for Catholic schools so that they can continue their vocation to children as educators and moral guides.

ENDNOTES

1   Dale McDonald and Margaret Schulz, "United States Catholic Elementary and Secondary Schools 2011-2012: The Annual Statistical Report on Schools, Enrollment and Staffing," National Catholic Education Association(NCEA), 2012; http://www.ncea.org/news/annualdatareport.asp; National Association of Public Charter Schools, http://dashboard.publiccharters.org/dashboard/students/year/2012.

2   Corrine Letsch, "Charter vs. Catholic schools: New research says charters are siphoning students from parish schools," New York Daily News, February 22, 2012, http://articles.nydailynews.com/2012-02-22/news/31088718_1_ charter-schools-catholic-schools-new-charter, accessed June 18, 2012.

3   Samuel Freedman, "Lessons From Catholic Schools for Public Educators," New York Times, April 30, 2010; http://www.nytimes.com/2010/05/01/us/01religion.html?_r=1.

4   Leo Linbeck III, (CEO, Aquinas Companies), interview by Sean Kennedy, June 12, 2012.

5   Joseph Womac, (Executive Director, Fulcrum Foundation), interview by Sean Kennedy, June 7, 2012.

6   Joseph Womac, (Executive Director, Fulcrum Foundation), interview by Sean Kennedy, June 7, 2012.

7   Michael Horn, "Virtual Schooling: Disrupting the Status Quo," Policy Brief: James Madison Institute, May 2010.

8   For more on Newark's experience on increased per pupil spending see Lori Drummer and Don Soifer, "Reform with Results for New Jersey Schools," Lexington Institute, December 2010; for national per pupil cost increases see U.S. Department of Education, National Center for Education Statistics. (2011). Digest of Education Statistics, 2010 (NCES 2011-015), Table 188 and Chapter 2.

9   Horn, "Virtual Schooling," 2; For text box: Heather Staker and Michael Horn, "Classifying K-12 Blended Learning," Innosight Institute, May 2012, p. 3.

10   Frederick Hess, as quoted in Greg Forster and James Woodworth, "The Greenfield School Revolution and School Choice," Friedman Foundation for Educational Choice—National Research, June 2012, http://www.edchoice.org/ CMSModules/EdChoice/FileLibrary/853/Greenfield-School-Revolution-and-School-Choice.pdf.

11   Sol Stern, "Save the Catholic Schools," *City Journal*, Spring 2007; http://www.city-journal.org/html/17_2_catholic_schools.html.

12   Archbishop Donald Wuerl, "Catholic Schools," Archdiocese of Washington, DC, 2011; http://site.adw.org/catholic-schools.

13   Archbishop Wuerl emphasizes "access" instead of sustainability, this study suggests that access is only possible if schools in underserved areas are sustainable, financially and academically. A school that is unsustainable cannot deliver excellence, Catholic identity or affordable education anywhere and it will eventually close.

14   The four suggested mission-based metrics are in no way comprehensive but can serve as guideposts for Catholic institutions and each poses a unique challenge for the Catholic system apart from the charter model.

15   Nicole Stelle Garnett, "Are Charters Enough Choice? School Choice and the Future of Catholic Schools," Notre Dame Law Review, 2012; Notre Dame Legal Studies Paper No. 12-50, January 19, 2012.

16   John Eriksen, (Superintendent, Paterson NJ Diocese Schools), interview by Sean Kennedy, June 12, 2012.

17   Leo Linbeck III, (CEO, Aquinas Companies), interview by Sean Kennedy, June 12, 2012.

18   Rick Ogston, "Carpe Diem Blended Learning Model," Carpe Diem Collegiate High School and Middle School, 2010, p. 4.

19   Joseph Womac, (Executive Director, Fulcrum Foundation), interview by Sean Kennedy, June 7, 2012.

20   Dale McDonald and Margaret Schulz, "United States Catholic Elementary and Secondary Schools 2011-2012: The Annual Statistical Report on Schools, Enrollment and Staffing" National Catholic Education Association, 2012; http://www.ncea.org/news/annualdatareport.asp;.

21   John Eriksen, (Superintendent, Paterson NJ Diocese Schools), interview by Sean Kennedy, June 12, 2012.

22   Authors calculation based on average cost per pupil spending of $10,615 in 2010. Based on US Census and NCEA enrollment figures (~2 million in 2010); see Mark Dixon "Public Education Finances: 2010," US Census Bureau, June 2012 and McDonald and Schulz, "United States Catholic Elementary and Secondary Schools 2011-2012: The Annual Statistical Report on Schools, Enrollment and Staffing."

23   John Eriksen, (Superintendent, Paterson NJ Diocese Schools), interview by Sean Kennedy, June 12, 2012.

24   Marcus Winters, "The Benefits of Florida's Test-Based Promotion System," *Civic Report*, no. 68 Manhattan Institute, April 2012, http://www.manhattan-institute.org/html/cr_68.htm.

25   Heather Staker and Michael Horn, "Classifying K-12 Blended learning," Innosight Institute, May 2012, p3.

26   Sol Stern, "The Invisible Miracle of Catholic Schools," *City Journal*, Summer 1996.

27   Staker and Horn, 12; Quote and background: Rick Ogston, interview, June 15, 2012.

28   "Carpe Diem Blended Learning Model," p. 5; Dale McDonald and Margaret Schulz, "United States Catholic Elementary and Secondary Schools 2011-2012: The Annual Statistical Report on Schools, Enrollment and Staffing" National Catholic Education Association, 2012; http://www.ncea.org/news/annualdatareport.asp.

29   Rick Ogston, "Carpe Diem Blended Learning Model,", 2-3; Ben Debow, "Carpe Diem Charter School Seizes Tomorrow's Innovations Today," *Heartlander*, April 22, 2011, http://news.heartland.org/newspaper-article/2011/04/22/carpe-diem-charter-school-seizes-tomorrows-innovations-today.

30   Michael Horn and Heather Staker, "The Rise of K-12 Blended learning," Innosight Institute, January 2011, http://www.innosightinstitute.org/innosight/wp-content/uploads/2011/01/The-Rise-of-K-12-Blended-Learning.pdf.

31   Don Soifer, "English Language Learners and NAEP: Progress through Inclusion," Lexington Institute, March 2012, 7.

32   Data provided by Seton Partners and Mission Dolores Academy based on ITBS/NWEA assessments.

33   Seton Education Partners, "Phaedrus: Beta Site Mission Dolores Academy First Year Implementation (4th Quarter Report)", May 2012, 7.

34   Scott Hamilton, (Managing Director, Seton Education Partners), interview by Sean Kennedy, June 7, 2012.

35   Scott Hamilton, (Managing Director, Seton Education Partners), interview by Sean Kennedy, June 7, 2012.

36   Joseph Womac, (Executive Director, Fulcrum Foundation), interview by Sean Kennedy, June 7, 2012.

37   Education Elements, Understanding Blended Learning, http://educationelements.com/our-services/understanding-blended-learning.

38   Scott Hamilton, (Managing Director, Seton Education Partners), interview by Sean Kennedy, June 7, 2012.

39   Scott Hamilton, (Managing Director, Seton Education Partners), email to Sean Kennedy, June 8, 2012.

40   "The Catechism of the Catholic Church," No. 3.2.2, Vatican.va; http://www.vatican.va/archive/ccc_css/archive/catechism/p3s2c2a4.htm; accessed June 18, 2012.

41   Erika Cedrone, (Coordinator for Hispanic Outreach, Catholic Schools Foundation – Boston), interview by Sean Kennedy, June 11, 2012.

42   Pru Hallarman (Assessment Associate, DC Prep Charter School), interview by Sean Kennedy, June 8, 2012.

43   Sadlier Religion," Sadlier's We Believe with Project Disciple, Online Student Assessment System," http://www.sadlierreligion.com/, accessed June 14, 2012.

44   Matthew Bowman (Phaedrus Lead, Seton Education Partners), interview by Sean Kennedy and Don Soifer, June 21, 2012.

45   Scott Hamilton, (Managing Director, Seton Education Partners), interview by Sean Kennedy, June 7, 2012.

46   Colleen Dippel, (Founder and President, Families Empowered), interview by Sean Kennedy, June 12, 2012.

47   Joann Weiner, "Charter School Lottery Gambles With Kids' Futures -- and Often Loses," PoliticsDaily.com, July 14, 2011; http://www.politicsdaily.com/2010/07/14/charter-school-lottery-gambles-with-kids-futures-and-often-l/.

48   Carly Everson , "Plan to convert Catholic schools in Indianapolis to public charter schools meets resistance," *Associated Press*, April 14, 2010.

49   Stephanie Saroki and Christopher Levenick, "Saving America's Urban Catholic Schools: A Guide for Donors," Philanthropy Rountable, 54.

50   Saroki and Levenick, 54.

51   Saroki and Levenick, 56.

52   Stephanie Banchero and Jennifer Levitz, "Vouchers Breathe New Life Into Shrinking Catholic Schools," Wall Street Journal, June 9, 2012, A1, accessed June 9, 2012; http://online.wsj.com/article/SB1000142405270230482130457744 40763188839928.html.

53   Father Joseph Corpora C.S.C, (Director, Catholic School Advantage Campaign, University of Notre Dame), interview by Sean Kennedy, June 6, 2012.

54   Nancy Derringer, "Michigan Should Expect a Charter School Marketing Frenzy," The Bridge Magazine, March 15, 2012; http://www.mlive.com/education/index.ssf/2012/03/in_arizona_a_thousand_flowers.html.

55   Stacy Rivera, "Marketing Your Charter School: Focus on Achievement," Colorado League of Charter Schools, http://www.cde.state.co.us/cdechart/download/BOOTC_SRivera_Mktg060910%20[Compatibility%20Mode].pdf.

56   Saroki and Levenick, 56-57.

57   John Eriksen, (Superintendent, Paterson NJ Diocese Schools), interview by Sean Kennedy, June 12, 2012.

58   Saroki and Levenick, 57.

59   Saroki and Levenick, 57.

60   Erika Cedrone, (Coordinator for Hispanic Outreach, Catholic Schools Foundation – Boston), interview by Sean Kennedy, June 11, 2012.

61   John Eriksen, (Superintendent, Paterson NJ Diocese Schools), interview by Sean Kennedy, June 12, 2012

62   Saroki and Levenick, 45.

63   Scott Hamilton, (Managing Director, Seton Education Partners), email to Sean Kennedy, June 8, 2012.

64   Colleen Dippel, (Founder and President, Families Empowered), email to Sean Kennedy, June 18, 2012.

65   Gilbert Cruz, "Looking for Solutions to the Catholic-School Crisis," Time Magazine, October 12, 2009; http://www.time.com/time/printout/0,8816,1929589,00.html, accessed June 1, 2012.

66   Joseph Womac, (Executive Director, Fulcrum Foundation), interview by Sean Kennedy, June 7, 2012.

67   Saroki and Levenick, 51.

68   Editorial, "DC's Successful Voucher Program Deserves a Second Life," Washington Post, June 23, 2010; http://www.washingtonpost.com/wp-dyn/content/article/2010/06/22/AR2010062204487.html.

69   Valerie Schmalz, "New Mission Dolores Academy features weekly Mass, lots of computers," Catholic San Francisco, September 6, 2011; http://www.catholic-sf.org/news_select.php?newsid=25&id=58872.

70   Leo Linbeck III, (CEO, Aquinas Companies), interview by Sean Kennedy, June 12, 2012.

71   Daniel Henninger, "How About a Good Catholic Story?," *Wall Street Journal*, May 20, 2010.

72   Cristo Rey Network, "Snapsnot," 2011.

73   Henninger, "How About a Good Catholic Story?,".

74   Saroki and Levenick, p. 90-91.

75   "ACE Teachers fron Notre Dame Aid Catholic Schools," *The Catholic Virginian*, Diocese of Richmond, August 22, 2011; http://www.catholicvirginian.org/archive/2011/2011vol86iss22/pages/article5.html.

76   Saroki and Levenick, 100-101.

77   Leo Linbeck III, (CEO, Aquinas Companies), interview by Sean Kennedy, June 12, 2012.

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