

# Education, Microsoft, and the Individual Entrepreneur

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This article discusses the role of large technology corporations such as Microsoft in partnering with and enabling independent entrepreneurs in the classroom. Cyber Village Academy (CVA, [www.cva.k12.mn.us](http://www.cva.k12.mn.us)), a “hybrid” online/bricks-and-mortar chartered middle school in Minnesota, provides an interesting case study. At CVA students attend classes on site Monday through Wednesday, working from home or the school’s Smart Lab the rest of the week. Former CVA director Bob Bilyk has created a computer-based Rich Internet Application called lodeStar ([www.lodestarlearning.com](http://www.lodestarlearning.com)) that enables teachers to more effectively customize learning materials to meet students’ individual needs.

With the aid of Microsoft’s Class Server ([www.microsoft.com/education/classserver.msp](http://www.microsoft.com/education/classserver.msp)), lodeStar has been able to fully integrate with online resources while maintaining the functional benefits of a desktop application. The result is an uncommon, tangible step forward in realizing the capacity for technology to bring increased customization and personalization to classrooms.

## **Technology and Education in the 21<sup>st</sup> Century**

Modern technologies have a unique capacity to impact two of the most fundamental and pressing challenges in America’s public education system: motivation and cost.

Educational research has demonstrated time and again that a high percentage of students are not motivated and are not learning well. At the same time, the cost to send a student to school is increasing at a rate of 7 percent a year, resulting simultaneously in tax increases and educational program cuts.

Technology has been proposed as a potential solution, but despite significant investment, efficiency gains are yet to be realized. In part, this is due to the fact that teachers are unable to make effective use of technology either to improve learning or to deal with rising costs in education.

Technology also promises a tremendous capacity to individualize and customize learning, but the move toward greater individualization has been blocked by the inability to fully leverage the new technology as well as by the old notions that kids must learn by listening to teachers instruct them in subjects. A new paradigm of more interdisciplinary learning, which has the potential to

be much more relevant, real, and motivating for students, is thus not accessible technically and not “available” politically.

Technology has long been available to classroom teachers, but, for a variety of reasons, schools have been slow to pick it up. Bob Bilyk discovered this while an instructor at the University of St. Thomas in St. Paul, MN ([www.stthomas.edu](http://www.stthomas.edu)) and at a nearby vocational-technical school. He worked hard to introduce technology to his teacher education students in the hopes that they would end up using it in the classroom, but had only limited success. Bilyk tried again when he became the director of Cyber Village Academy, a chartered middle school in St. Paul. Students at CVA attend classes on site Monday through Wednesday, working from home or the school’s Smart Lab the other days of the week. Students can take parts of their courses online, and communicate with each other and their teachers regularly using email and messaging programs.

Even with a focus on computers, the Internet, and online courses, Bilyk wanted to take technology further in the classroom and curriculum. Believing that the teacher-technology disconnect resulted from a lack of time and opportunity, he reserved half of the workday as free time for teachers to explore the use of technology in the classroom. When this still didn’t solve the problem, Bilyk concluded that the stumbling block was the complexity of the technology. This led him to create lodeStar, a tool that simplifies and automates the process of creating technology-rich learning materials.

### **Moving Towards Personalization**

CVA uses lodeStar to personalize the learning experience in two ways: through customized learning materials created by teachers, and through student projects. The curriculum at Cyber Village Academy is based upon the Middle Years Program (MYP, [www.ib/myo.org](http://www.ib/myo.org)) of the International Baccalaureate Organization and, unlike the college-prep courses offered by the better-known high school IB, the MYP framework provides for a mix of classwork and interdisciplinary projects.

The classes at CVA are developed by the staff who have at their disposal a wide variety of structured learning resources and objects from companies such as Apex Learning ([www.apexlearning.com](http://www.apexlearning.com)). These resources are mixed and matched (and augmented with activities developed in lodeStar) to form the class-based portion of the CVA curriculum.

To create a technology-rich learning activity with lodeStar, a teacher accesses a 'wizard' that guides the teacher through the process of putting text, images, audio, video, or animations into the various templates. The tool works with Microsoft’s Class Server to fully integrate with Web-based search engines, so teachers can quickly pull the information they find into the activities they are creating, without concerning themselves with the complexities of downloading, resizing, or reformatting. There are wizards to support the development of a presentation, a Web quest, an annotated timeline, and a deck of flashcards. New wizards can be added to lodeStar as the need arises.

Teachers publish the finished learning activity to Microsoft Class Server, the school’s designated Learning Management System (LMS). The LMS manages the assignment of the learning activity

to the student, records the match between the learning activity and state standards, and, when the activity is completed, records the student's performance. The combination of lodeStar and Class Server enables teachers to provide a completely customized, technology-rich learning experience for students.

When students are not attending classes at CVA, they are working on individual or small-group projects. Students can use lodeStar to create project presentations and other rich learning materials and then use Class Server to share these with other students.

### **Partnerships in Innovating**

Bilyk left Cyber Village in the summer of 2007 to devote himself to the development and distribution of lodeStar full-time. At the moment, lodeStar and Microsoft Class Server are in use at hundreds of schools in dozens of countries around the world. The program that revolutionized teaching and learning for CVA by putting the creative capacities of technology within the reach of educators could not have reached the level it has if either Bilyk or Microsoft had been missing from the equation. As the head of CVA, Bilyk had the personal knowledge of the school and its needs, accompanied by the drive and competence to carry a program through many stages of development. Microsoft brought the power of its Class Server and the institutional support of its associates.

This cooperation between CVA and Microsoft is quite unique, if not anomalous. Not every innovating educator will have—or needs to have—a high-level of technical skill like Bob Bilyk. Even so, this partnership between the entrepreneurial educator and a technology corporation is a good step forward for education. In most cases, it was usually the large corporations that drive technological innovation in education: designing learning software, computer research aids, smart boards. Schools and districts are responsible only for its purchase. What these businesses are missing is a direct line to the classroom. The potential looks promising for business to follow the example of lodeStar and move toward a sort of venture-partnership with those closest to schooling: teachers, parents, administrators, or school boards.

This principle is already at work with the many foundations and non-profits that have partnered with innovative schools—namely chartered schools, but not exclusively so. There is no reason why for-profit businesses could not partner with individuals or groups of educators in a similar manner, but with slightly different outcomes. While foundations and non-profits are in a way 'selfless' organizations, in that their purpose for existence is to maximize utility but not profit, businesses also have a vested self-interest in seeing that their clients do well. There is great opportunity in this model, especially when it comes to product innovation and the creation of the tangible devices that can be replicated and distributed broadly.

Foundations can be valuable as a responsive, and nimble, source of start-up funding for innovative programs. The Gates Foundation, for example, stepped forward to help replicate the first teacher-led programs in Minnesota in the 1990's. Similarly, non-profits fill niche needs pertaining to innovative schools and pedagogy. Indeed the availability of private financing speeds the process of innovation quicker than if the government were solely responsible. It is principally the role of the state to ensure the laws are in place to allow this creativity to bear fruit.

Enter a corporation, especially one focused on technology, that is willing to invest energies and resources in assisting entrepreneurial educators, and the possibility arises for product and product-usage innovations to take place in real time in real classrooms.

As the charter sector opens the teaching profession to non-traditional educators (those who came to teaching in a roundabout way, via business or research rather than through traditional teacher training), new sorts of entrepreneurs with unique skill sets and backgrounds are finding their way into classrooms. Retired professionals, those switching mid-career from private industry or other sectors, even college faculty from science and math fields, bring unique insight and energy. Partnering with technology corporations such as Microsoft will enable these educational entrepreneurs to bring their ideas to a larger audience and spur continued innovation in education.

### **Addressing Motivation and Cost**

School is an information industry. Traditional models of school reflect the economics of scarcity that until quite recently imposed themselves on other information industries such as film, music, television, books, and newspapers and magazines. In each of these sectors, as it is now in conventional public education, efficiency was essential. Each strove to achieve economies of scale in production, distribution, retail, and customer service. These are still concerns of course, but with the advent of technologies and especially the Internet, many costly restrictions—production and distribution especially—have become limitless.

When designing the model of public education that we see today, it was not economical (or possible) to place a high school at the end of every other block, or to take the steps necessary to personalize each student's education. The best way forward under an economy of scarcity was to create larger learning communities where students sat in large classes and teachers assumed some form of lecture as the appropriate pedagogy.

This model of “batch processing,” while having worked quite well for establishing and assuring universal access, has limitations now that we are shifting national focus from student access/attendance to student achievement. In this new paradigm, high levels of motivation are essential, as they are for any enterprise that depends on the effort and creativity of its workers. Further, the things that drive motivation are individual in nature. Young people differ in their backgrounds, interests and aptitudes. Since achievement depends on effort, and effort is determined by motivation (preferably coming from within), it is imperative to personalize the learning process so students can pursue their own intellectual interests. The capacity of digital electronics to personalize learning now makes it possible to create a model of school more likely to generate the motivation on which excellence depends.

School is not presently doing a good job at motivating young people. Students, to feel ownership and excitement over their education, need the ability to control the process of learning. They should have the flexibility and authority to pursue their own interests and values as they see fit. Such a model of education does not exist in large, comprehensive schools.

The case of lodeStar is evidence that modern technologies can be harnessed to personalize learning on a large scale. We see that it is possible for the educator and the student to use advanced software if packaged correctly. Traditional schooling was designed for an era in which students could not access information directly, and so needed to be taught by adults who had the knowledge the students did not. This relationship is now changing dramatically, making possible a shift from the old paradigm of schooling as teacher-instruction to a new paradigm of students learning with teachers advising, facilitating, and coaching.

Cost is also becoming increasingly relevant. Operating revenues are falling short of growing expenses, and taxpayers are growing weary of referendums that go only to support the status-quo. By capturing the capacity of these technologies to personalize, service-delivery can be shifted from teacher-lead to a sort of supported-self-help. Class sizes have to be kept within reasonable limits, but they will never be reduced to a scale that achieves customization within conventional structures. If we can tap into the other worker in the classroom, the student, then this goal of personalization becomes possible. These workers, unlike teachers, are not compensated.

## **Conclusion**

The experience of Cyber Village and Microsoft brings to question the way American classrooms are geared for creative incorporation of technology. The more points of decision there are in a school, the more likely it is that innovation will take place. As director of CVA, Bilyk had the autonomy necessary to structure the school around a technologically-orientated curriculum.

Microsoft and Class Server made this possible. The partnership that formed between an individual educator and the large corporation has resulted in achievements greater than had one party been missing from the equation. The result is a new step forward in the personalization of education, customizing without requiring significantly more labor on the part of the adult worker. Foundations and other non-profit organizations have proven themselves valuable in supporting innovative new forms of school and schooling—it appears business may have a role as well.