CIO’s Guide

to Vision and Planning for Technology in Education

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Why Vision and Planning?

This Guide is designed to help a CIO lead a school district’s efforts to envision and plan how technologies should be used in teaching and learning. It is based on the experience of two cities, Denver, Colorado, and Rochester, New York, as their CIOs led collaborative efforts imagine what a day in the life of a student should look like, publish this vision to the community, and then use it as a source for planning and implementation.

The Guide begins with a rationale for vision and planning, includes samples from the work at Denver and Rochester, and closes with a step-by-step suggestion for you to follow as you lead a similar effort in your own district.

WHY SHOULD YOU DO THIS?

Shared Understanding
Perhaps the many actors involved in education and technology in your district need to move toward a consensus among the many ongoing projects and pilots in this area. Perhaps you need to develop a consistent understanding — internally among staff and leadership — of the value of technology in education. Perhaps you need to help your IT folks see the real benefits of technology to students, and understand their personal link to the work of students. Perhaps you need to unite a disparate leadership team in your city. The visioning process can help move forward on all of these fronts.

Community Support
Perhaps you need a clear picture of the benefits of technology in schools, to build support in the community, among citizens, taxpayers, parents, and policy-makers. Perhaps you need to generate enthusiasm and buy-in for your technology efforts. Perhaps a compelling vision can serve as a precursor to raising the funds necessary to moving forward.

Collaboration
The visioning process followed by Denver and Rochester, and many other districts around the world, has been based on collaboration. The visions were created not by charismatic leaders or visionary vendors or geeky technicians, but by the students, teachers, and principals who work in the schools. It’s a user-centric approach. The value of collaboration among the small groups that brainstormed scenes for the Day-in-the-Life, and the sharing across cities of these dreams, formed the essential core of the process.

In both Denver and Rochester, we found that the relationships built during the visiting process — between the CIO and the instructional leadership, between the teachers and the technical staff, and among all levels of the school community — have served to enable progress even in difficult times. Both cities also found that the process demonstrated the commitment of the technology team to the larger instructional goals of the district.
HOW WE ACCOMPLISHED THIS

CIOs in both cities followed a similar process:

1. We recruited and selected a cross-functional, representative group that included teachers, students, principals, parents, IT staff, and vendors.

2. In small, mixed groups, these members of the school sketched scenes of a day in the life of a student using technology for learning.

3. We shared and discussed these sketches across groups and across cities.

4. We remained focused throughout on the student point of view: what the student was actually doing as he or she used technology for learning.

5. We combined the sketches and scenes into a narrative story — a script — with human and dramatic appeal.

6. We developed the script into video that helped make the vision concrete and specific.

OUR NEXT STEPS

In Rochester, we will use the vision as we conduct pilots of 1-to-1 learning in four schools, introduce blended learning offerings in two of these 1:1 schools, switch to digital textbooks in
social studies and science, and set up student-run help-desks in each school. We hope to influence the Governor’s *Smart Schools* initiative through our contacts with his advisory group.

In Denver, we will use the vision to conduct gap analysis and planning, to help us move from where we are to where we’d like to be. The vision serves as a catalyst for thinking through the redesign of specific schools, and as a catalyst for planning future investments.

**Day in the Life: Denver**

What would a day in the life of a Denver student look like if we took full advantage of the possibilities of the new technologies for teaching and learning? The text and video below follow some students through such a day.

**TO READ (TEXT VERSION)**

*Let Alex and Maya, two Denver students, describe a day in their lives as they’d like them to be.*

**Connections**

Alex: Connections make the world work. And learning is all about making connections that are meaningful to me. More than ever before, technology can personalize my education, and help me make those connections.

Maya: How will we build these connections, and the potential for making new ones? What will my learning in a connected Denver Public Schools look like?

Alex: My name is Alex. I’m 10 years old and in 5th grade. My mom drops me off at school on her way to work. While I eat breakfast, I look at Student Portal. I can see my schedule for the day and what I'll be working on in each of my classes.
Connecting activity

Maya: I’m Maya. I’m 15, in 11th grade but I’m taking AP Calculus and a college course, too. Before I even leave for school in the morning, I check in using the student portal. I start choosing from my day’s suggested lessons and activities. My deadlines are all laid out for me. And I can tell my advisor that I’ll drop by her office when I get to school.

Connecting concepts

Alex: In Math, we start with adding and subtracting fractions with different denominators. My favorite part is that I get to choose how I show what I am learning. Our teacher shows some of us on the interactive whiteboard, while a few of us already know how. We follow along on our tablets, or tap on some of the links for extra help. It is easy to learn more when everything is just a tap away.

Connecting students

Alex: We break into small groups. Ms. Foster knows who goes together because of the information she gets from her computer. The groups change all the time, based on what we need. But, we can get help from other groups or from Ms. Foster, just by asking a question from our tablet.

Connecting to the world

Maya: In the economics unit that I selected, we’re working on a project with some students in Lima, Peru, studying the path of copper from the mines in Peru to its use here in the United States. We have meetings over video chat. We’re collecting information and creating a script together that will eventually turn into a short documentary video. And we’re able to do this as a group, even though we’re 4000 miles away from each other.
Connecting to the Earth

Alex: We have a school garden that provides some of the vegetables for our cafeteria. It’s my job to track these vegetables in our online spreadsheet. How many we harvest, how many are eaten, how much is thrown away. The information automatically goes to some high school students who are collecting this information from schools all over town. Then we’re showing how growing our own food compares to schools where they buy all of it.

Connecting to nature

Maya: School is the hub for my learning, but it’s not the only place I learn. No matter where I am, I can check in on the resources that my teachers provided, stay in touch with my teachers, or connect to my friends for help. And I can help them too.

Connecting to community

Maya: My internship is at water policy organization this semester. I got to go out and do testing of ground water, I helped the engineers collate and present the data. My work counted towards mastery of many state standards and credit in chemistry and my journalism class.

Connecting language

Alex: When I moved to the U.S., I didn’t speak English. I’m still not great at writing it. But, I can translate or look things up on my tablet when I need to. Ms. Santistevan has us publish our
best pieces on the class site. When I know others can see my work, it makes me try really hard. Ms. Santistevan says that hard work has shown in my class projects and in my test scores.

**Connecting school with the world**

Maya: My Mandarin class is all online. I access the lessons, join conversation groups, and record and turn in all my work online. This lets me take the class when I want, so I can fit in things like the internship. And, it lets us pick some classes that only two or three of us might have taken.

**Connecting body and mind**

Alex: I don’t spend the whole day doing school work. After school, I have soccer. I’m sure the adults think we’re learning something, but we all just like to have fun together.

**Connecting families with school**

Alex (with his mom at a dinner table, looking at his tablet, working on a physical map showing pre-revolutionary America.): When my mom and I both get home, she can help me with my homework. She can see everything that is due, and get links to directions that show her how to help me. I am proud of my portfolio and she can see my work.

Maya (with her dad video chatting with her mom): My mom travels for work a lot. It’s pretty easy for her to stay in touch with dad and me.

Mom (in hotel room chatting with Maya and dad, checking parent portal.): I set up alerts and send mom updates so she can stay in touch with my schoolwork, too. She gets to see all the same
cool things dad and I can see, including how I’m doing. She gets to hear from my teachers and she gets to stay involved with my life.

*Connecting learning to everything*

Maya: It’s not quite as good as having her here all the time, but it’s not bad. It’s really good to feel connected.

**TO WATCH (VIDEO VERSION)**

[Image: MAKING CONNECTIONS, A Day in the Life of a 21st Century Learner]

Click or tap here to open the video in another application. (You must be online to access the video.) The video is posted at [http://ed3dot0.net/cgcs/Denver.mov](http://ed3dot0.net/cgcs/Denver.mov)
Day in the Life: Rochester

Let these students take you on a learning journey through the newly-visioned Rochester schools.

TO READ (TEXT VERSION)

NARRATOR- It was the start of a day filled with promise and opportunity for the students in the Rochester City School District. The promise is that every student has the potential to be the best he or she can be, and the opportunity is the prospect for each student to be able to use the available technology to learn, and create a place for themselves in today and tomorrow’s world.

STUDENT 1-(on bus with device in hand)

I want to know what is happening as soon as I am on my way to school. Thank God this bus is equipped with wi-fi, ‘cause I have to check if my teacher posted the grades from my math quiz. (checks grades) Cool. I did pretty well. Hopefully, our basketball team did as well. (checks device)
I got a minute before we get to school and I gotta get this drawing I did of a building in before 8 AM.

STUDENT 2-(student at home eating breakfast and checking device as parent looks on)

Hey Mom, you asked what I am doing today, here you go. (Hands device to mother or shows Mom class schedule)

MOM- Looks like you’re busy today. Are you going to be able to help your sister after school?

STUDENT 2- I wish I could, but I’m manning the phones at our helpdesk for students. Not all the students are as sharp as me, Mom!

MOM- I just know that last year you struggled in your Earth Science class. I don’t want you waiting until the last minute.

STUDENT 2- Don’t worry about me this year. We’re doing the coolest project. We’re getting ready for a field trip to the river. (student checks device) Mom, I just got a text from Coach Gibson. He changed our practice until 4 o’clock tonight.

STUDENT 3-(student checks fitness tracker as he is walking with other student who attends and stays at the campus school) Man, this fitness tracker is da bomb! But I’m finding out that I’m
not as active as I should be. I need to walk at least 12,000 steps, and it’s just not happening. Not only that, but I’m learning that I’m not eating the right stuff.

STUDENT 3 FRIEND- Where’d you get the fitness tracker? What’s it for?

STUDENT 3- The fitness tracker makes it easy to track activity, sync stats, see trends, and reach goals. We’re using them in our phys ed class. It’s really cool cause we continuously sync the stats to our computer and smartphone. We get real-time access to our progress and reminders throughout the day without having to plug anything in.

STUDENT 3 FRIEND- Knowing you, I think the reminders are a good idea.

STUDENT 1- (Meets up with a couple classmates in room where academic coach is helping others) (approaches friend) I believe I know what Ms. Simmons wants for the project but I’m not sure of the location of these buildings we’re supposed to evaluate.

STUDENT 1 friend- I say we use Google maps so we know where we’re going.

STUDENT - Good idea. That should save us a ton of time and work. As a matter of fact, let’s put the route on our laptop instead of killing trees by printing it.

STUDENT 2- (in science class online researching how to collect and compare water samples) Hey, I think I have the way we can collect water samples without cross-contaminating them. Hey Jamie, can you find out the best method for comparing the water samples once we get them? This is one of the coolest things we’ve done this year. I really didn’t like science class last year. And having a laptop makes it easier and a lot more interesting than the ‘old school’ textbooks we used last year.

STUDENT 3- (is seen helping an adult with a laptop issue)

STUDENT 3 Friend (learning math formulas using device to project on board. In the math class students recharge devices while working on the quadratic equation theory of black holes) (Student 3 Friend sees Student 2) Hey, wanna go work out after school today?

STUDENT 3-I can’t today. I’m working the student-run helpdesk. There were a lot of students out today. Must be the flu. Anyway, during school today, the helpdesk students were busy connecting and helping the sick kids at home with whatever they needed from school. You know, with assignments and homework. We even had some of the students connect live with their class so they wouldn’t miss much. The students were able to join in from home using Skype or Face Time. But let’s get together tonight or tomorrow.

STUDENT 3 Friend. I just remembered that I can’t go to the gym either after school today. I’m going to #20 School. I’m a School-to-School mentor to some of the 4th and 5th graders.

STUDENT 3-What’s a School-to-School mentor?

STUDENT 3 Friend. It’s a pretty cool deal. As part of my Participation in Government class, we’re involved with community service projects. I chose to work with some of the little kids, and help them learn how to study and get through their work. Most of them know what to do, but
there are just some kids who need real help. And to tell you the truth, I'm learning as I mentor these kids.

STUDENT 3- That does sound cool. Did you hear what Angel is doing now? Because he’s so good with Spanish, he’s working at the Baden Street center helping some of the Spanish-speaking families in the neighborhood get access to community services. And he’s helping them learn how to use the computers there. He even had one woman Skype with some of her family in Puerto Rico.

STUDENT 3 Friend. Man, it looks like everybody’s busy. I asked Julia if she wanted to hang out, and she’s at the Eastman School working with music students over there. She’s learning how to write music. The cool thing is that they all collaborate online. An Eastman student will write something, and Julia will add to it. They’ll all be giving a concert later this year so we’ll see if she’s as good as she says.

(Two students – Student 4 looking up the research and Student 5 working on the course from our LMS together in a lab or library or on a bus.)
STUDENT 4 – I’m really into my digital textbook. Ever since we started using digital textbooks, I never have to worry about losing my books, and I can use them anywhere. I really like some of the activities in the digital textbooks too. Those old school paper textbooks were deadly, weren’t they?

STUDENT 5 – I totally agree. I am loving this new laptop we’re using. I’m taking an RCSD (Rochester City School District) online course in computer programming. My teacher is really helpful. He is in constant contact with us. I get to keep the laptop as long as I take care of it. It’s not an easy course, but I’m learning a ton, and having this laptop makes it easy to use anywhere. Instead of an hour wasted on the bus every morning, I get an hour of work done. Now on the bus in the morning, I get almost an hour of work done instead of that boring ride. We’re using laptops for everything now.

STUDENT 4 – Same here. I read my assignments while on the bus, and my teacher said that she likes digital textbooks because they can provide more current material than print textbooks, which can take a year or two to get to print. I like them because I don’t have to carry all those books I used to carry. Now everything is in one package.

NARRATOR: Many of our families are below the poverty level and cannot afford costly Internet access services. But that does not preclude them from getting online. The City of
Rochester has a program: Equity to Access Initiative, that grants its residents Internet access through a free ‘wi-fi blanket’.

The youth of Rochester are now engaged in sustained, year-round learning as the Rochester City School District uses online instruction to extend student learning beyond the school day. Students use their district-provided devices to stay connected with their teachers, complete homework, and gain experience, knowledge, and skills through exploration. Instruction is scaffolded to address the unique needs of each child. Online learning is used for initial credit classes, as well as for credit recovery and Regents review courses.

In the Rochester City School District one of our core beliefs states, “we have an ethical responsibility to ensure readiness for college, career, and responsible citizenship.” We believe that we can achieve our goals and help create students that are job ready, career ready, and active citizens in the community. To help accomplish this goal we believe that we need to embrace modern technologies and teach our students how to use the technologies so that our students can achieve their fullest potential.

TO WATCH (VIDEO VERSION)

Click here to open Rochester’s Day in the Life video in another application. You must be online to access the video. The video is posted at http://ed3dot0.net/cgcs/Rochester.mov
How to Lead Vision and Planning

This section of the CIO's Guide is designed to help the CIO lead the effort to develop a clear vision of their schools’ future, and create a top-level plan to get there. It provides a detailed description of the visioning process, and educates the CIO on how it works. This Guide will help prepare the CIO to lead a school or district through a visioning process that has been delivered successfully with many educational institutions around the world. Included in the appendix are several documents that may assist the CIO in the process. This section of the Guide begins by summarizing the steps in the visioning process, then provides instructions to help the CIO conduct each step.

BACKGROUND

The CIO should keep in mind that it’s not his or her educational vision that is being developed through this process, but the district’s. Therefore, we can expect each city’s vision to be different, to reflect the needs and dreams of the many varied educational communities that comprise our nation. Though no two visions will be the same, a few characteristics seem to be common to all visions developed through this process:

1. The vision is developed from the perspective of a student, as a description of what the student will do throughout the course of his or her learning.

2. The vision is communicated primarily through pictures that depict the work the student does throughout the day, accompanied by the voice of a student explaining what’s happening.

3. The vision describes how digital networked technologies will be used for teaching and learning.

These three elements distinguish this visioning process from others, and help the school community to break free of the educational jargon, checklists, and abstract statements of policy that burden many other approaches to educational planning and transformation. The focus is on what the student does in the classroom, on the bus, and at home as he or she learns. It forces the community to think about three key questions that school reformers and technologists seldom ask about their students:

- What's in their hands?
- What’s on their minds?
- What’s in their hearts?

When we pay close attention to these questions, we make a difference in students’ lives. As the leader of this process, you will ask these questions many times to your participants as they create their vision.

PROCESS
This multi-phase process develops a clear vision of the future of a school, and a top-level plan to get there. Working as a team, representatives of the school community examine the changing world around them, consider the energy and industry of their young people, and paint a picture of the school that serves that world and those students. Frequently they imagine a school far different from the one they have today.

To see more examples of the kinds of visions produced through this process — in addition to those from Denver and Rochester described above — connect to the Education 3.0 web site at ed3dot0.net.

After creating and sharing their vision with the local community, school leaders develop an action plan to make the changes and investments necessary to make their dreams come true: they determine the educational and technical infrastructures, policies, and practices necessary to implement their vision.

AUDIENCE

Ideally, participants in the visioning process should recognize the need for change and commit to help make it a reality. In order of importance, the key participants are students, teachers, principal(s), superintendent(s), district office leaders, parents, board members, community members, and technology experts.

The process may not be effective with the following types of groups:

1. If they are happy with the schools they have, they will not see a need for change.
2. If they are unwilling to make the changes and investments necessary to develop a forward-looking program, it is not a good use of time and resources to participate.

3. If there is no decision-maker in the group who can help move the action plan from vision to reality, the process will be for naught.

Participants in the process should include a broad sample of the school community. Success depends on the involvement and commitment of all, or as many as possible, of multiple points of view that each of the recommended participants brings to the table. From the beginning of the process through to the end, you need the consistent and committed involvement from all aspects of the school community — not only to create the momentum to take action, but to secure the buy-in by all constituencies, and to lead the ultimate change management. This collaborative approach builds the support needed to make the necessary transformation.

The CIO should work closely with instructional and policy leaders in the district to recruit and select the members of the visioning team.

**PHASES**

The vision and plan involves five phases, preparing for and following up on a day-long face-to-face workshop. The phases are:

- Phase 1: Preparation – 1 hour
- Phase 2: Conference – 3 hours
- Phase 3: Workshop – all day face-to-face meeting
- Phase 4: Production - 2-3 weeks
- Phase 5: Plan – 3 hours

It starts with a preparatory discussion between the CIO and a key instructional leader, to explain the purpose and outcomes of the process. Next comes a conference with a core planning group: the CIO, the instructional leader, a principal, a teacher, and a student. Here you plan the details of the face to face workshop day. The vision workshop day consumes six hours with everyone in the same room, where they sketch a vision of a *Day in the Life of a Student* in their transformed city.

After the workshop day, the CIO or a designee develops these sketches into a slide show with a written script. After further development by the district team — perhaps extending the slide show into a video — and circulation among key constituents, the vision presentation is used to develop a plan of what exactly needs to be done to move the school toward making its vision a reality. From beginning to end, the process at its most efficient pace takes about one month. But most cities will take at least six months, to ensure the inclusion of all points of view, and to involve the entire school community in the production of the vision.

1. **PREPARATION**

Purpose:
The CIO ensures that the district is ready for and committed to the visioning process, and finds a colleague on the instructional side to share leadership.

Steps:
1. The CIO identifies a key instructional leader(s) who will help with the effort and set the stage. This might be an assistant superintendent, a curriculum leader, or a principal.

2. The CIO schedules a meeting with this key colleague. In doing so, the CIO reviews the goals and structure of the process. Before the meeting, the key colleague should know what he or she is getting into. The CIO should invite them to look at a sample vision and plan from another city (or two or three). Several of these visions are posted online at the Education 3.0 web site at ed3dot0.net.

3. The CIO meets with the key colleague. Here the CIO learns as much as possible about the instructional needs of the schools and the goals of the district; and the key colleague learns about the vision and planning process. Here is a suggested agenda for this meeting:
   - Key colleague(s) describes the nature of the schools and the need to change.
   - CIO explains the steps and deliverables of the visioning process.
   - All agree on dates and locations for the next two steps, the conference and the workshop.
   - All agree on additional members to serve on the core vision team (a principal, a teacher, and a student.)

4. The CIO sends a follow-up written summary of the vision and planning process, with dates and locations, to the key colleague(s).

2. CONFERENCE
Purpose:
The conference of the core vision team, a three-hour meeting, allows the CIO to introduce the vision and planning process. It also sets the stage for the full-day vision workshop, and begins the process of selecting participants in the full-day workshop.

Participants:
The participants should include these folks, or their equivalents:
   - a key instructional colleague
   - a principal
   - a teacher
   - a student
   - the CIO

Pre-Work:
Before the conference, the participants review online pre-work to familiarize themselves with the vision and planning process. They read, watch, or listen to podcasts of *Education 1-2-3* as well as two or three *Days in the Life*. They also review a sample System Requirements Document from another school, and read other relevant material on education transformation, selected by the CIO. Several of these visions are posted online at the [Education 3.0 web site](http://ed3dot0.net).

Agenda:

1. The CIO reviews the steps in the vision and planning process, and discusses the concepts set forth in the pre-work.

2. The CIO listens as the others introduce their goals and directions for transformation. The CIO keeps the discussion focused on how the transformation affects the work of students on the ground, in school and at home. Key questions to guide this discussion include:

   - How will the student's experience in your transformed school differ from the way it is today?

   - As students work in your ideal school, what's in their hands? What's on their minds? What's in their hearts?

   - On the scale of Education 1, 2, and 3, where is your school today? Where will it be after the transformation is complete? Why?

   - How does schoolwork extend beyond the school day?

   - How is the parent's role different? The teacher's?

   - How do students assess their progress in the transformed school?

   An open and frank discussion at this point is essential to the success of vision process; it is indeed the centerpiece of this conference. The purpose of the discussion is not to arrive at any conclusion, but to get the others thinking hard about their motivation to transform. Do they indeed recognize the need for change?

3. The last segment of the conference prepares everyone for the upcoming full-day vision workshop. The discussion covers these points:

   - Who's coming to the workshop? Stress the importance of involving teachers and students, as well as board members and parents. Explain that successful vision workshops have ranged from four to forty participants.

   - What are the best strategies to get the workshop participants to do their pre-work before the workshop? It will make the time spent much more productive!

   - What do we need at the workshop? Review the location for the workshop, and its technical capabilities. A high-quality projection system and robust internet access are essential. Tables around which teams of four or five can work are essential. A tablet at each table, on which sketches can be drawn and then wirelessly projected to the big screen, makes for an efficient, interactive workshop.
• What will we do at the workshop? Review how the workshop will proceed (see next section), and what it will produce.

• What’s my role? Have the district key contact review the roles of the core vision team at the workshop.

• What’s for lunch? Confirm the time, place, duration, and setting for the workshop. Take care of providing refreshments and lunch.

These should each be discussed, with the CIO or designee taking notes on the big screen as the decisions are made.

4. Follow-Up: The CIO sends an extensive follow-up written summary of this conference, with dates and locations, to the key colleague and core team.

3. WORKSHOP

Purpose:
The full-day, large group visioning workshop is the pinnacle of the visioning and planning process. At this event, the CIO and key colleagues meet face-to-face with a broad sampling of the school community. The group may include as few as half a dozen to as many as 40 participants. They should fully represent the school community: leaders, teachers, students, parents, citizens, IT staff - the more fully representative, the better.

Before the workshop, each participant completes online homework to prepare them for the day. At the workshop, they discuss their dreams for education, then get right to work envisioning what their transformed schools will look like. Working in small groups, they sketch and script scenes from the Day in the Life of a Student. The workshop concludes with a presentation and discussion of the scenes.

The Vision Workshop requires advanced planning, to ensure quality participation by the relevant groups, and to do the behind-the-scenes homework necessary to a successful day.

Invitation:
At least two weeks week before the vision workshop day, the CIO sends a written invitation to workshop participants. This includes:

• Date, time location and specifics (map, security, etc).

• Goals for the workshop.

• Reminder of and links to the pre-work that they are expected to complete.

• Contact information in case there is any problem.
A week before the workshop, the CIO sends a friend reminder, repeating this information, and asking for an RSVP.

Workshop Agenda:

1. **Introductions:** The first speaker at the workshop day is the highest level school leader available: the superintendent or board chair. In this welcome the leader explains to participants why they are going through the visioning process, and the importance of their contributions. The leader closes by introducing the CIO, who in turn welcomes everyone.

   The CIO asks each participant to introduce him or herself and, depending on the size of the group and time available, to relate one dream for the district vision.

   The CIO explains how the day will proceed and what the group will produce. If students are present, the CIO makes a special point of encouraging their participation and contributions. The CIO at this point also ascertains if everyone has done their homework, by asking them how the historical analysis of *Education 1-2-3* applies to their local situation, and what they thought of the *Days in the Lives* that they saw.

   If it seems like most participants have not done their homework, the CIO should proceed to present a shortened version of *Education 123*, and to show one of the *Days in the Lives*. Having a shared understanding of the material is crucial to the collaborative visioning process and the participants need to start with the common references.
2. **Sketch:** This is the key element of the vision workshop, where participants draw and talk through scenes in the day in the life of a student at their transformed school. Participants should be assembled into groups of three to six, mixed by district role. Ideally, each group includes at least one student, one teacher, one administrator, and one parent, and a board member or citizen.

The CIO reminds them the purpose of the sketches: to illustrate an instant in the day in the life of a student, through the student's eyes; and that the sketches will guide the production of the slide show. If necessary, the CIO shows a slide or two from an existing *Day in the Life* from another school, to serve as a model. The CIO also sets some guidelines for each sketch. A good sketch should:

- illustrate what's happening from a student's perspective.
- include specific curriculum content, with concrete examples.
- show what's in the student's hands.
- mention what's on the student's mind.
- refer to what's in the student's heart.
- show a scene that does not commonly happen today in the school.
- illustrate a key concept in this school's transformation.

**Sketch Session One:** As the groups sketch in Round One, the CIO circulates to discuss what they are coming up with and to ensure that the sketches meet the criteria listed above. For the first sketch, allow about half an hour. Encourage them to sketch right on their tablets.

Here's an example of a sketch drawn by one of the small groups at Denver:
And here’s how they describe what’s happening in the picture:

Alex and Briana are Denver Public School 10th graders. They have been working on a collaborative presentation about the global economy for the last three weeks with two students in Tanzania. Alex and Briana recently finished photographing corn farming and corn oil production in Colorado. They used this to create the first slides in the life of corn oil. The two groups then worked to create the middle slides about transportation of corn oil to Tanzania. The two students in Tanzania have then been showing through photos how they buy and use the oil. In this picture they are showing the Denver students how they slaughter a chicken that they will then cook in corn oil on a wood stove.

In Denver’s Day in the Life narrative above, this scene is called Connecting to the World.

Next, each group should present and explain their sketch to the entire assembly. This is done most easily by connecting the group’s tablet to the projector so that the sketches can be seen on the projection screen. Allow a few moments of discussion of each scene. Through these presentations and discussions the vision develops and solidifies in the minds of the participants. These discussions build the consensus that will produce the final vision presentation.

Sketch Session Two. After discussion, ask the groups to sketch another scene from the Day in the Life. Encourage them to choose different subjects and settings and uses of technology in this round. Allow about 20 minutes for sketching, and a half hour for presentation and discussion. Repeat the rounds until the group has generated at least a dozen scenes, representing a full day, and illustrating all aspects go the student’s work.

3. Script: The last step in the vision workshop is for each group to write a script for each sketch. The script should simply explain what’s happening from the student’s perspective. The script may be written from the first person perspective ("I enter the library with my tablet in my hand ready to meet with my project group…") or the third person ("Sally enters the library with her tablet in her hand ready to meet with her project group…") The simpler, more direct script works best. Encourage the groups to avoid educational jargon, statements of belief, buzzwords or empty adjectives, and to focus on the practical and concrete. Remind them to include in their scripts answers to the following questions:

- What's in students’ hands?
- What's on students’ minds?
- What's in students’ hearts?

See sample script below the sketch from Denver, above.

4. Close of Day: Here the CIO summarizes the events of the day: goals, processes, key points brought up in discussions, sketches, and scripts. A review of next steps – what will be done with their work, follows. Do a quick round robin to allow all (if it is small group) or group representatives to talk about how the day went. Examples of questions might include:

- What did you learn today about possibilities for your school?
• What was your favorite part of the day?
• What would you like to do next to make your vision a reality?
• What are your next steps now that you have these ideas on paper?

Invite your key colleague to summarize and close the day. Before ending the workshop, collect the sketches and scripts, and explain how they will be produced as a slide show and returned to the leadership for review.

4: Production

**Purpose:** The next job for the CIO is to turn the sketches and scripts into a narrated slide show and podcast. This is best done as soon as possible after the workshop day, so that the discussions are fresh in the CIO’s mind.

1. **Edit the Script.** Study the scripts and sketches, and determine the best order for them. They might be ordered chronologically, beginning in the morning and ending at night; or by the ages of the students, from youngest to oldest; or any other sequence that makes for a good story. Once ordered, copy and paste the scripts into a single document and edit for style. Rewrite as necessary to achieve a present-tense, practical, concrete and consistent script that captures the spirit of the group’s vision.
Notice how Denver’s sketch of Tanzanians killing chickens was edited to Peruvians mining copper. The educational purpose and the technologies remained, but the content was changed to fit better with the task at hand and the sensitivities of the audience.

The CIO him or herself may not be the best person to edit the scripts. In both Denver and Rochester, folks from instruction and communications took over this task. Other districts that have gone through this visioning have involved student production or drama classes in developing the scripts into good stories.

To get ideas for style, read scripts from other visions, as posted on the Education 3.0 site at ed3dot0.net. Run the draft script past your key colleague and selected participants in the workshop for review and comment.

2. Draft the Slides. Copy the script scene-by-scene into the presenter notes section, slide by slide, of PowerPoint or Keynote. Use an existing Day in the Life as a model. Then add images, slide by slide, to match the script. Build in images one after the other to show action within each slide. If the school includes a teacher, staff member, or student familiar with this kind of slide show production, encourage them to perform this work.

You may use the sketches produced at the workshop, or photos provided by your schools, or images drawn from the image collection posted on the Cisco Education Vision and Planning web site at http://lengel.net/cisco/images/images.html.

4. Produce Slides and Podcast. Revise the slides as necessary based on feedback from your colleagues. To turn the slides into a podcast, add a voice-over narration of the script. The narrator may be the CIO, the key colleague, or (better yet) a student from the school. For instructions on how to produce a podcast, see 50 Ways to Make a Podcast. Also, export from the slide show a PDF file that contains the slides as well as the script. Both PowerPoint and Keynote can do this easily.

5. Distribute. Make the slide show, video, or podcast available to your key colleague, to student, faculty, and community groups, to school leaders, and to the press, in several formats:
   - The text of the script
   - A slide show in PowerPoint or Keynote
   - A PDF file of the slide show with notes
   - A narrated podcast
   - A video

6. Promote. Circulate the Day in the Life among the participants in the workshop day, and to the school community. This is best done by posting the variously-formatted files online where they can easily be viewed and downloaded by all, perhaps on the district's web site.
5: PLAN

**Purpose:** To turn the vision illustrated by your *Day in the Life* into a plan of action, you will create two new documents:

*Behind the Scenes.* This version of the slide show or video adds callouts that show the technical and educational infrastructures necessary behind the scenes, to make each scene possible. Both PowerPoint and Keynote include text boxes and speech bubbles to make this an easy process. You can see an example of such a document on the Cisco Education Vision and Planning web site at [http://lengel.net/cisco/vision/DITL_Texas_BTS.pdf](http://lengel.net/cisco/vision/DITL_Texas_BTS.pdf).

*System Requirements.* This spreadsheet takes each element of each scene, and spells out the technical, educational, and policy changes that need to occur in the school or district to make these scenes a reality. A sample System Requirements document is attached as an appendix to this *Guide*. Instructions for preparing this spreadsheet are also included in the appendix.

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**Appendix**

**SAMPLE INSTRUCTIONS AND HOMEWORK FOR WORKSHOP PARTICIPANTS FROM CIO**

Hello <Participant Name>,

Welcome to the XYZ Schools' Vision Workshop.
With this message I explain the workshop and assign your homework to be completed by <the workshop date>. Please pass this along to anyone else that you know will be attending the workshop. Feel free to contact me with any questions or suggestions. I'll see you on <the workshop date>.

(Don’t worry, the homework is all online, and will take about 45 minutes to complete.)

<CIO Name>, CIO
CIO email, <CIO phone>, <CIO instant message address>

What is the Vision Workshop?

The Vision Workshop is designed to help us develop a clear vision of the future of XYZ schools, and begin development of a high-level plan to get there. Working as a team, our school community will examine the changing world around us, consider the energy and industry of our young people, and paint a picture of the schools we need to serve that world and those students. I expect we will imagine schools quite different from the ones we have.

After sharing this vision with the community, we’ll develop a plan to make the changes and investments necessary to make our dream come true -- the educational and technical infrastructures, policies, funding, and practices necessary to each element of our vision.

Before participating in the workshop, it is important that you recognize the need for change -- if you are happy with the schools we have, or are not willing to make the changes and investments necessary to develop a better program, then you are not a good candidate for the workshop.

The workshop will proceed in five phases, centering on the day-long face-to-face workshop scheduled for <date and day>:

1. Preparation: XYZ schools leadership, both instructional and technical, have worked together in <month> to plan the visioning process.

2. Conference: A select group of XYZ school leaders worked with me to plan the details of the <workshop date> workshop day.

3. Workshop: The big workshop day on <workshop date> involves six hours, where you and a cross section of the XYZ school community will sketch a vision of a Day in the Life of a Student in our transformed schools.

4. Production: After the workshop day, my team will develop your sketches into a slide show with a written script. After further development by our leadership team, and circulation among key constituents, the slide show will be used to develop a plan of what exactly needs to be done to move XYZ schools toward its vision.
5. Plan: Given your vision, we will develop a plan to execute the vision over the short and long term: the educational and technical infrastructures, policies, funding, and practices necessary to each element of our vision.

Many schools have worked their way through this process, and you will be reviewing their results along the way to help you understand the elements you might include in your vision and plan.

What will we do on <workshop date>?

We will work through a process of envisioning transformed schools. We'll begin with a discussion of our dreams of a student fully engaged with technology and learning. We'll brainstorm a Day in the Life of a student in XYZ as it will be transformed. We'll develop the brainstorm into a series of sketches, share them, and detail them with scripts.

What's the result?

At the end of the day on <workshop date>, we will have a rough draft of a Day in the Life of a student in XYZ. My team will work these up into a slide show or video, which we will discuss with our school community. Once we’ve discussed it in this way, we will turn the Day in the Life into a Plan of Action for what we need to do next to lead our schools to their new vision.

What's my role?

Your role is to participate fully in the process of visioning and planning: to complete your homework before the <…day’s> session, and to encourage other members of the team to contribute fully to the discussions as they sketch their Day in the Life.

What's my homework?

Before our conference on <workshop date>, you'll do these assignments:

1. Read or watch Education 123.
2. Read or watch the Days in the Life of at least two schools.
3. Dream about what a Day in the Life would look like for your transformed school.

All of these (except #4) can be found online at ed3dot0.net

INSTRUCTIONS FOR DEVELOPING SYSTEM REQUIREMENTS

How to extract your System Requirements from your vision of a Day in the Life of a Student
The student in your vision presentation carries out a multitude of educational tasks during the day. Each of these tasks calls for some sort of technology, sometimes traditional (a book, for instance), sometimes digital (a computer). The sum of all the technologies required by students teachers to carry out their respective tasks is called your system requirements. These are the technologies and related items you'll need to accomplish your vision.

You don't need an engineer to design your system requirements. You can do it yourself, by studying closely your vision presentation and following through on what you see there. You'll do this on a spreadsheet, as shown below. Here’s how.

1. **Describe a learning activity.**

   Look at the first slide or scene of your vision presentation. What is your student doing? What kind of learning activity is he engaged in? Let's say that in the first slide he is connecting to his online biology course from home just before breakfast, to download some illustrated readings to his tablet for study on his way to school. That's the learning activity. You'll put this in the first column of the System Requirements Template. To make the template easier to understand, you'll describe the learning activity a bit more generically: Students download to mobile devices multimedia assignments and resources from home and school. This learning activity will dictate the kinds of technologies you will need.

2. **Describe the hardware in the student's hands.**

   Start with what's in her hands, the hardware on which she'll download the assignment. In this case it's a tablet, a common mobile learning device. So, in the second column of the template, labeled Hardware, you'll enter mobile device with internet connectivity and multimedia capabilities. It's important here to spell out exactly what the hardware needs to do, in this case be small enough to be carried and used on the bus or subway (tablet-sized), able to connect to the server where the assignment is stored (internet connectivity), able to display the illustrated reading from the online biology course (multimedia capabilities.) If your description is not complete, you may not get what you need.

3. **Describe the software the student needs on that hardware.**

   Don't assume the device will come out of the box with the software the student needs, and don't assume that the standard programs will suffice. Be specific in what you enter on the template in the third column, Local Software. This student will need an internet browser to connect to the learning management system that holds the biology course, as well as a program to save and display the text and the images in the lesson. So enter Web browser with multimedia display and storage capability. List only the software the device needs for the student to accomplish the learning activity in the first column.

4. **Describe the network services required for this learning activity.**

   If the student could accomplish this task without connecting to the network, then you'd leave this column blank. But in the case at hand, the student needs a solid network connection from his device at home to the school's LMS. And since most mobile devices use wireless connections,
5. Describe the network infrastructure needed for this learning activity.

Here is where you describe the servers and routers and other hidden items that are so essential to enabling this learning activity. You may need some help from a technology consultant to complete this description (or you may copy from one of the examples in the System Requirements Sample.) Your description might be: Server capacity for multiple online course storage, along with bandwidth and port access sufficient for multimedia downloading.

6. Describe the server software necessary to this learning activity.

The kind of online biology course you envision in this learning activity calls for a Learning Management System, stocked with multimedia biology content suitable for the ninth grade and aimed at the Regent's exam and formatted for mobile devices. Again, the description must be specific; not just any biology course will suffice to put into your student's hands the materials she needs, when and how she needs them. Write your system requirements to force the lowest bidder to provide you exactly what you need. The System Requirements Sample can provide you with some useful wording.

7. Describe the skills teachers will need to make this learning activity happen.

The downloading at home and study on the subway will never occur unless the teacher works this assignment into the biology course. Most teachers have never taught with the assistance of an online course or a mobile device, so teacher development becomes a system requirement. Describe it here in the second-to-last column: How to integrate a Learning Management System and mobile devices into the everyday curriculum.

8. Describe the skills students will need to make this learning activity happen.

We sometimes assume that our students already possess the technology skills they need to do the kind of learning activity we envision. Don't be so sure. List student development as a system requirement for each activity. In the current instance it might be: How to access assignments from LMS, download them to a mobile device, and learn with them outside of school.

What you have just done is to take a single scene from your vision, and work it back through the network of devices, software, services, and skills that are necessary to make it happen. If your vision presentation shows what's on stage, the system requirements show what's behind the scenes. And as you can see, there's quite a bit of work to be done back there.

So continue on: take each and every scene in your Day in the Life, describe it as a learning activity, and walk it back through to the various system requirements. Not all learning activities will show an entry into each column, but most will involve several behind the scenes.
requirements. Don't be afraid to use the System Requirements Template for ideas -- we compiled this from the work of more than a dozen schools just like yours.

Don't worry about repetition -- you'll find that the same system requirement shows up over and over (such as robust standards-based network available from school and home) as being required for many different learning activities. The more times a requirement shows up in the template, the more important it is to your vision. Feel free to copy and paste as you complete the template.

Once your System Requirements Template is complete, take it to your information technology staff, or to your technology vendors, and ask them to design the system for you, columns two through six. Take it also to your professional development staff, and to your curriculum people, and ask them to look at the first and the last two columns and plan accordingly to deliver the goods.

<table>
<thead>
<tr>
<th>Slide</th>
<th>Learning Activity</th>
<th>Hardware</th>
<th>Local Software</th>
<th>Network Services</th>
<th>Network Infrastructure</th>
<th>Server Software</th>
<th>Teacher Development</th>
<th>Student Development</th>
<th>Policy</th>
<th>Responsible</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Student of the month appears on digital display in hallway.</td>
<td>Digital display</td>
<td>Video production and editing</td>
<td>Video storage and delivery to digital display</td>
<td>Robust network with high bandwidth to digital media display</td>
<td>Video storage and management and distribution</td>
<td>Video production and digital editing</td>
<td>Video production and digital editing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Parents use online work portal.</td>
<td>Personal Computer with full multimedia capabilities</td>
<td>Web browser, video capability</td>
<td>Management of school information (curriculum, school store, lunch, etc.)</td>
<td>Robust network with high bandwidth to digital media display</td>
<td>Storage, management, and distribution of curriculum and other school information (database)</td>
<td>Use learning management database to store and track curriculum</td>
<td>Learn, and then teach parents to use curriculum and other school information (database)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Superintendent answers by videoconference</td>
<td>Digital display</td>
<td>Videoconference software</td>
<td>Videoconference delivery and origination to digital display</td>
<td>Robust network with high bandwidth to handle videoconferencing</td>
<td>Video storage and management and distribution</td>
<td>Global collaborative project design</td>
<td>Video production and digital editing</td>
<td>Global collaborative project work</td>
<td>Video production and digital editing</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Solar energy curriculum project</td>
<td>Computers or tablets with science probe capabilities</td>
<td>Probes, data analyser, data display, drawing, science content</td>
<td>Wireless and wired connections to science instruments</td>
<td>Robust, standards-based network to science data</td>
<td>Science content management</td>
<td>Use of project-based learning and science probes</td>
<td>Project-based learning and science probes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Students present results to outside experts.</td>
<td>Projection from computer or tablet</td>
<td>Multimedia report-authoring</td>
<td>Storage of multimedia student reports</td>
<td>Robust network with high bandwidth to handle multimedia reports</td>
<td>Secure storage of student multimedia reports</td>
<td>Locate and work with outside experts</td>
<td>Learn digital production and presentation skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Students present results to outside experts.</td>
<td>Tablet for each student</td>
<td>Web browser</td>
<td>Management of curriculum and student information (Learning Management System)</td>
<td>Secure robust network with wireless capability to mobile devices</td>
<td>Learning Management System</td>
<td>Learning Management System</td>
<td>Use of learning management system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Students produce podcasts in project groups</td>
<td>Computer or tablet with video camera</td>
<td>Podcast production software</td>
<td>Podcast storage, management and distribution</td>
<td>Robust network with high bandwidth to handle videoconferencing and streaming</td>
<td>Media storage, indexing, management, and distribution</td>
<td>Podcast production Group project design</td>
<td>Podcast production Group project work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Students deliver presentations to other schools</td>
<td>Videoconferencing unit</td>
<td>Videoconferencing</td>
<td>Videoconference delivery and origination to classroom</td>
<td>Robust network with high bandwidth to handle videoconferencing</td>
<td>Videoconference management</td>
<td>Videoconferencing</td>
<td>Videoconferencing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Teacher takes notes on student work</td>
<td>Tablet for each teacher</td>
<td>Student progress management</td>
<td>Management of curriculum and student information (Learning Management System)</td>
<td>Secure robust network with wireless capability to mobile devices</td>
<td>Learning Management System</td>
<td>Learning Management System</td>
<td>Tablet use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Students respond to questions online, displayed on big screen</td>
<td>Tablet, laptop, or clicker</td>
<td>Audience response</td>
<td>Management of audience response and display</td>
<td>Secure robust network with wireless capability to mobile devices</td>
<td>Audience response and display</td>
<td>Use of audience response systems</td>
<td>Use of audience response systems</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**System Requirements Template**
CASE STUDY: DENVER AND ROCHESTER

Under the leadership of CIO Sharyn Guhman in Denver, and Annmarie Lehner in Rochester, these two cities engaged in a vision and planning process, that may serve as a case study of the method described in this Guide.

What we did

The Council of Great City Schools asked Denver and Rochester to lead a visioning exercise in our districts, as a first step in leading and planning for the future. Our goal was to build a vision of what we believe an average day of our students should look like and consist of IF we are preparing them for success after graduation, and for success with life in the 21st century.

• What technologies should be available to them in school/out of school?
• How should they use them?
• How should they use collaborative tools to connect with teachers and other students, both inside and outside of school?
• How will this challenge them?
• How can the availability of these technologies make their learning more challenging?

We each produced a video of A Day in the Life of a Student that illustrates this vision. You can see our videos at http://ed3dot0.net/cgcs/Denver.mov and http://ed3dot0.net/cgcs/Rochester.mov. As we did this, we:

• Partnered with educational leadership.
• Generated enthusiasm and buy-in for this effort.
• Took an “ask for forgiveness rather than permission” approach and simply moved forward.
We recruited and selected a cross-functional, representative group, that included teachers, students, principals, parents, IT staff, and vendors. We met individually with Principals, Board Members, and IT staff...selling the idea and generating enthusiasm and excitement.

**Why we did it**

In Denver, we were seeking a consensus among many technology projects and pilots. We wanted to develop a consistent understanding internally of the value of technology in education. We wanted to help IT folks to see the real benefits to students and understand their personal link to living our shared value of “Students First”. And we wanted to provide a catalyst to get schools and staff thinking about what is possible and exciting for our students. All of this, we thought, would prepare us for future community conversations about the need for additional technology integration.

In Rochester, we needed a marketing tool to build support for technology in the community, as a precursor to raising funds necessary to moving forward. The Rochester City School District is the lowest performing district in New York State. Rochester has the 6th highest poverty rate in the country. We have less than 50% graduation rates. Charter Schools are expanding – we are losing students at an accelerating pace. We need more offerings to both retain students AND to provide students with opportunities they deserve. We need to create learning environments that meet the needs of our 21st century student learners.

**Visioning Process**

We gathered our cross-functional, representative group into one room for a full day of visioning. Before they came, they all did some reading and thinking about education and the future. We met in each city in a Telepresence room, so we could collaborate as we envisioned. These small, cross-functional groups intermixed parents, students, teachers, principals from different schools. We interspersed the IT staff and vendors in these groups. This allowed different thought processes – that were not just linked to specific school needs. It produced valuable out of the box thinking.

**Sketches**

In small, mixed groups, we sketched scenes of a day in the life of a student using technology for learning. We shared and discussed these sketches across groups and across cities. We focused on the student point of view, what the student was actually doing.

**Script**

After the vision workshop day, we reviewed the full set of sketches for key elements and selected the elements to be included in our vision, rather than simply develop the specific sketches (collaboration, project based learning, international exposure, etc). We voted on which elements were most important to us, using the sketches as a starting point for script. We then refined the script with input from experts (Curriculum, ELL, etc.)

**Production**
We selected student actors and commissioned student music, filmed and produced. Videos were taken in our schools, on our school buses; using our students and teachers as actors.

**What we learned**

- The value of collaboration, among small groups, and across cities.
- The value of the CIO-instructional-community relationships built through this process.
- The value of demonstrating the commitment of the tech team to instruction.
- That student involvement is critical.
- The value of aligning all related parts of our organization – curriculum, teacher talent management, assessment, school leadership, and executive team.
  - While this process requires time & commitment, it is essential to meeting the needs of our 21st-century students.
  - That relationship-building is critical to the success of the work we have to complete, after the visioning process ends. That’s when the real work begins.

**Next Steps**

Rochester:
- 1:1 pilots in four schools;
- blended learning classes in two of the 1:1 pilot schools,
- 1:1 take-home pilots,
- digital curriculum & digital textbooks pilots;
- student-run help-desks;
- influence NYS Smart Schools bond initiative.

Denver:
- Gap analysis and planning;
- Catalyst for thinking through each school’s design for personalized or blended learning;
- Share with operations departments to drive planning for what is necessary to attain this vision (e.g. power supply, classroom design, community conversations);

**Advice to CIOs**

- Involve team members as broadly as possible;
- Include both visionaries and pragmatists;
- Ensure that a core cross-functional working group is committed to seeing the work through;
- Just start the conversation… even if you don’t know exactly where it will lead.
• Ensure that Teaching & Learning is a partner...help them shine.

• Think of the Technology Division as the facilitator...our role is to start the conversation, educate Teaching & Learning by helping them understand the role of technology in 21st century learning, showing them examples of this, providing them with opportunities to see & hear from the perspective of the 21st century student learner.

• Help them to build the vision...but let them own the vision.

About the Authors

**Sharyn Guhman** is the Chief Information Officer of Denver Public Schools (DPS) and actively works to drive innovation and excellence while fusing technology and education. Before serving as CIO, Sharyn led the DPS Program Management Office working to bring technical projects to fruition at DPS. Sharyn previously spent more than 16 years in management and IT consulting leading large-scale systems implementation and change-management initiatives across a variety of industries. Sharyn left her successful consulting career in an effort to find more meaningful work, and she’s found it in K12 education. The work is personal to her as she is also a parent with two children attending DPS schools. SHARYN_GUHMAN@dpsk12.org

**Annmarie Lehner** is the Chief Information Officer of the Rochester City School District in Rochester, New York, an urban district comprised of 60 K-12 schools, 31,000 students, and 6,000 employees. Annmarie oversee all facets of network infrastructure, telecom (VoIP), MS Exchange/Office/Forefront/SharePoint, wireless, Internet connectivity, ERP applications (PeopleSoft Business apps, Pearson PowerSchool SMS Student app), HelpDesk, Security, school technology support, Print Shop, District-wide Copier services, Instructional Technology, Online Learning Initiatives, Library Services. Annmarie is a member of the Superintendent’s Executive Cabinet Team, supporting the organization’s strategic initiatives. Prior to her role as CIO, Annmarie held the positions of Director of Business Enterprise Applications and software developer, for a total of twenty-seven years of experience as an IT leader in a K-12 institution. Annmarie.Lehner@RCSDK12.ORG

**Jim Lengel** is the author of *Education 3.0* and eight other books on education, communication, and technology. His teaching career began in 1971 as Peace Corps volunteer, and includes 43 years of work at the elementary, secondary, and university levels. He earned degrees at Yale College and the Harvard Graduate School of Education, served as the Deputy Commissioner of Education for the State of Vermont, and as consultant to Apple, Cisco, IBM, Sony, Microsoft, Amplify, and dozens of schools and colleges around the world. His work focuses on the application of new technologies to teaching and learning, and the improvement of teaching through video analysis. He can be reached at jim@lengel.net