CHAPTER

5

The Case for a Student Help Desk

- **What is a student-run help desk?**
- **The help desk structure**
- **Authentic learning experiences**

If you ask anyone at Burlington Public Schools what was one of the best outcomes of the 1:1 iPad initiative, they'd tell you it was the student help desk. The student help desk not only provided a unique learning opportunity for students, but it also effectively supported our 1:1 initiative. Burlington Public Schools' director of technology, Bob Cunha, said this initiative would have happened with or without the help desk addition, but it made the tech team's job a lot smoother with it involved. Most importantly, Cunha could focus his time and energy on managing and maintaining a robust network, while students in the help desk took care of password resets and Wi-Fi issues.

During our first year with the help desk course we allowed any student to take the course. What we learned is that we weren't so much looking for students interested in computers, but students who were self-directed learners. This learning moment led to setting up interviews for students who elected to take the course. Students had to sign up for a time, show up with a resume, and engage in a brief interview. We asked the students a variety of questions and then had them go through a battery of tests. For example, we turned off the Wi-Fi on one of the devices and asked the student to see what the problem was. We weren't looking for the quickest fix,

rather, for a student who could deconstruct a problem and know when to move on and come back to it later. We also wanted students to offer a "plan B" for issues they could not immediately resolve.

In this chapter I will share the two courses I created at Burlington High School and at Groton-Dunstable Regional High School. I will also share stories of students who took the course. These personal accounts will not only reinforce the impact of this course but also offer evidence for how technology can impact a student both academically and throughout his or her career. I'll start with the course description below:

The Student Technology Integration course is a hands-on study of technology integration in an educational context. Students will be required to assess problem sets throughout the day and define the best approach to addressing or solving the problem. In addition to solving problems for their classmates and teachers, students will be required to complete and maintain several running projects that address problems or solutions in educational technology integration. The course also asks students to have a prior understanding of Apple OS, Microsoft Windows OS, and the iPad iOS.

Welcome to BHS Help Desk. This course will examine various problems and needs throughout Burlington High School. This semester, we will not be waiting around for problems to come to us, we will be finding and addressing them. This is not to say we won't encounter problems here in the Help Desk room, but we will be more aggressive in seeking out the problems and needs of our faculty and students.

This semester we will not only be helping, but creating, curating and organizing information and content for the faculty and students. This may come in the form of a blog that you manage for a department. It may be building an iBook resource companion for one of your teachers. It may be building a set of instructional videos and books for the school to use. In short, we will have plenty of work to do throughout the course of this semester. Whatever you heard about Help Desk during season one will not surface during season two. Help Desk has changed, and in order to maintain a good grade in this class, you will need to perform. This course will elicit and require skills that are relevant to most professions.

We have also added new features to the help desk this year so that we concentrate our talent in the right areas of need.

Help Desk Opportunities for Faculty and Staff

1. Help Desk Tutorials

During the second semester, teachers can schedule time during their free periods and come down to Help Desk for a one-on-one tutorial of your choice. This can be on a specific application that you want to learn more about or just an overview of the iPad or your computer. We will match you with a Help Desk student and you will have as much time as needed during that period. You can sign up **here** for Help Desk tutorials. This feature is also open to students. If you would like your class to learn how to use an application before starting a project, we can assist with this as well.

2. Share and Connect

(This opportunity is primarily for the teachers, but you may be asked to help with organizing and teaching this platform.) I want to start highlighting the amazing work you and your students have been doing over the past semester on our bpsedtech.org[1] blog. If you have a lesson that you designed that you are proud of along with student work that came out of that project, please share a short write up of the lesson and links to any student work.

3. In Class Assistance

If you would like Help Desk students to assist with or set up equipment for a lesson you are conducting in class, you can sign up **here** for that time. This student will be scheduled to meet with you during your period for as long as you need him or her.

4. Help Desk on Twitter

If you are using Twitter, you can now access Help Desk by using the hashtag #bhshelpdesk. This will give us a method of responding to your issue immediately.

5. The BHS Resource Wiki

(This is primarily for the teachers, but you may be asked to help with organizing and teaching this platform.) I mentioned this wikispace at the beginning of the year and want to have departments take over the space and add resources to it as they populate. Once approved, you can add a page or create one for sharing resources with your entire department throughout the year. Think of it as a digital communal file cabinet. Also, as we move toward creating more ePubs, this space will be good for gleaning resources when they are needed. If you have any questions about the wiki please contact me.

Help Desk Pathways

1. Bloggers

Bloggers will be responsible for authoring and maintaining a blog for departments, teachers and Help Desk. We will be creating a comprehensive student Help Desk blog that must be updated daily. Each day there should be new content populating on the site; therefore, you will need to find and create information to post. This can come in the form of a

(Continued)

weekly podcast, interviews, original posts, reaction posts to current events regarding technology, or short documentaries that you create on specific subjects. Regardless of the subject, this site should be flourishing with new content each day.

2. Genius Bar Trainers

The Genius Bar Trainers will be responsible for deconstructing daily problems with the technology at the school. This job will require an expertise in a variety of applications or the willingness to learn new applications. Also, this path of the course will require competency in Apple iLife and iWork programs (iPhoto, iMovie, Pages, Numbers, etc.). Participants will be giving one-on-one tutorials to teachers, staff and students. You may be required to enter a classroom and present an overview of an application before the teacher uses it with his or her class. When you are not training, you will be putting together tutorial videos, scripts and iBooks.

3. App Developer Course

The App Developer Course will be the most challenging section of the course, but potentially the most rewarding. Participants will be taking the Stanford University iPad and iPhone App Developer Course via their iPad and iTunes U. This course will be very challenging and time consuming. While

you should already have an understanding of some programming, it is not required.

4. iBooks Authors

This pathway will help teachers, administration and staff with creating ePubs or iBooks. You should have an understanding of Apple Pages and the new iBooks Author application. The majority of the time you will be migrating content from either analog or digital form into these two applications. A lot of the time will be spent on formatting and adding images, video and audio clips to the publication. Also, if you are unfamiliar with these applications but possess a willingness to learn them, please sign up for this pathway.

5. Choose Your Own Adventure

You also have the opportunity to propose a pathway for second semester. In your proposal you must define your goals, objectives, resources needed, and the hurdles you may encounter along the way. I would also like you to detail the impact you expect your pathway to have on Burlington High School.

Tasks and Assignments

1. Help Desk Journal

Regardless of the course path you choose, you will document your productivity each day via a Google Doc

journal. At the end of each class or each night, you will post your progress for the day. Note that I will view the timestamp for each daily post, so this is not something you should cram together Friday afternoon. Also, this is not simply busy work, but a running dialogue of your Help Desk progress. On occasion, I will not be in class and helping with a problem, so you must maintain productivity and transparency.

Each post should include what you accomplished for the day, who you helped or what you learned. Depending on which path you take and what you accomplish for the day, your post may come in the form of a link, video or brief blurb. It could also come in the form of a problem you are having and your attempt to reconcile that problem. Also, there may be a point in the course where you feel that you have to do some work or study quickly for a test. This is fine on occasion, but do not turn Help Desk into a study hall. If you abuse this opportunity, your grade will suffer.

2. Help Desk Meetings

We will conduct Monday and Friday meetings to check in on how things are going. Most of the time you will be working independently throughout this course, so this will be our opportunity to check in with each other and address any questions.

Source: Groton-Dunstable Regional School District

STUDENT HELP DESK RESULTS

There is no doubt that the student technology integration course (Help Desk) at Burlington was a glowing success, both with students and our school community. I had the opportunity to work with several students throughout my two years over-seeing this course, and I have continued to stay in touch with the course through the new Help Desk teacher. She has carried on this course and made great strides in adapting it and making it her own.

Over the past two years, Burlington High School Help Desk students spoke and presented at MassCUE (Computer Using Educators), which is held at Gillette Stadium in Foxboro, MA. In both instances, the students shined and not only owned their learning, but they were able to eloquently convey how this course had impacted their learning and career paths.

For Help Desk students, this course was not just a computer course or technology course, but a course in life. Students were asked daily to solve problems both individually and collaboratively. Students had to interact on a professional level with their peers, their teachers, and former teachers. Plus, administration regularly

called on students to assist with technology and digital projects throughout the year. The Help Desk students designed and maintained blogs for several departments at the high school, as well as helped principals and assistant principals begin to blog and create a digital space. Students worked alongside us at professional development events such as BPScon and after-school Genius Bars.

In short, the benefits of this course were seen through the actions and accomplishments of the students. This course did not have exams or quizzes; rather, every day was an exam, a quiz in what each student could do when faced with a real problem. And in education, this is where we must lead our students. For too long, creative, high-stakes testing has overshadowed inquiry-driven learning. Courses like Help Desk are just the beginning in what can be a creative approach to teaching and learning. The technology simply supports these new paradigms for classroom and instructional design.

Authentic Learning Projects

Students Organize and Host an Edcamp

One of the elements I enjoy most about being a teacher is the element of surprise. I'm referring to that moment when a student or group of students really amazes you. You mentor these students, give them your best as a teacher day in and day out without any required thanks, and occasionally this student or group of students unintentionally returns the favor in the form of intrinsic motivation. They're driven because they find purpose in what they are learning or doing. This couldn't be more evident than with my Help Desk students who organized EdCampxEDU.[2]

This was the first, to my knowledge, Edcamp designed, organized, and carried out entirely by students. While I have been an advisor to these students, I have remained on the periphery of this project. Initially, I met with students who were interested in organizing this event and gave them the run-down on what the format was and how an Edcamp functioned. Having organized three NTCamps (an Edcamp format for new teachers) and created and run Edcamp Tuesdays at Burlington High School along with Dennis Villano,[3] I knew what it took to make an Edcamp work. It's a daunting task for any team of organizers.

The EdCampxEDU organizers stepped up to the challenge. During this project I observed the team starting to receive prizes from various vendors to give out on June 1, I watched as they planned the opening address, and saw them prep the final details of planning. Oh, and when the organization team is not planning EdCampxEDU, they are at track or baseball practice, attending a full schedule of classes, or getting ready for work at their part-time jobs. Some even managed to fit in prom.

This experience will impact them more than any SAT exam, AP test, or MCAS test. This experience provides students with the opportunity to elicit skill sets and apply them to a purposeful scenario. It's project-based and challenge-based learning at its best. It meets the needs of many Common Core standards and is something that will stand out on any college application or resume. This team will get to say:

> "I designed, organized, and carried out an education conference."

> "I managed a budget and networked with vendors."

> "I used social media for advertising and web 2.0 tools for marketing and promotion."

I am proud of these students. And I know that this type of project gave them a wealth of new skill sets and exposed them to many new challenges and opportunities that they might not have otherwise had.

GILAD'S STORY

I had one of those conversations recently that I won't forget. But first, let me provide some context to this story. While I was teaching the Help Desk course last fall at Burlington High School, I had a student ask his guidance counselor if he could work on one of the iMac machines that had XCODE installed on it during 5th period every Thursday. I agreed and took on Gilad as an independent study.

Every Thursday Gilad quietly entered the help desk room and opened XCODE. Our interaction was limited, but over his shoulder I could see he was doing work far beyond my knowledge base. Gilad entered the same way every Thursday for four months. Around January, he asked me if we had a developer account with Apple. We did. I set him up with Bob Cunha (Burlington director of technology), who got him set up, his device registered, and explained the process of app submission.

In a matter of a few months, Gilad had taken time out of his study hall and developed a voice recording and submission application that will eventually be used by the Burlington High School Guidance Department for setting up appointments with students.

A few months later, Gilad approached me during lunch and asked if I knew of any programming opportunities or internships for the summer. I said I would check back with him and started seeking out my network. I contacted two friends at Google in Cambridge first. Unfortunately, they did not have anything at the time. Plus, most of their deadlines had already past. I continued to search until I remembered my brief consulting work I did with MobileAware[4] in early 2012. I contacted

my friend, MobileAware CEO Armin Gebauer, to see if he had any openings for internships. He mentioned that they had just created an iOS development team. I connected Gebauer with Gilad, and they eventually set up an interview. Gilad soon accepted the internship and had been working there for a few weeks when I wrote a blog on the topic; below is an excerpt.

Yesterday, I decided to check in with Gilad to see how he was doing. Here is the transcript of our brief conversation:
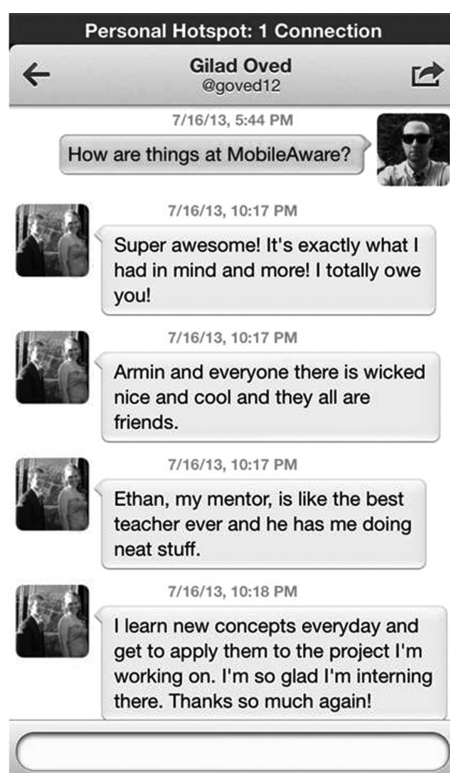
Source: Gilad Oved

And this is why yesterday was a good day for me. I was able to establish a connection for a student and help him find a learning environment that not only challenges him, but connects him with professionals who can mentor and inspire him. And that, I feel, is part of being a good teacher and connected educator.

I'm not writing this post to boast. I simply phoned up a connection and made a match. The piece of this that caused me to pause and reflect is how the connection was made. In many circles I hear the first step to being a connected educator is Twitter. It's imperative that we, as educators, sign up for Twitter and dive head first into an oncoming wave.

Respectfully, I have to disagree with this sentiment (which is a generalization for the most part). While Twitter has its merits, it will never match personal connections.

I connected with Armin by accident. I just happened to sit next to him and his wife one night out for dinner. Being two extroverts, Armin and I began discussing our work and it led to me getting hired as a consultant with MobileAware. When my tenure ended at MobileAware, I continued to connect with Armin. I connected with Gilad through his guidance counselor. And finally I connected Armin with Gilad.

I'm not trying to argue the merits of Twitter but simply offer a different path for new teachers looking to test the waters of social media. There are days when I can't quite grasp the credibility of Twitter voices: the blind re-tweeting, the pseudo celebrity aura, the echo chamber, the hierarchy, the "let's change the etymology of the word 'cheating'" (and every other word in order to show a progressive, "disruptor I am" persona). It's deafening. And quite frankly, if I were mentoring a new teacher, I'd tell them to hold off on Twitter.

Consider making personal, in person connections in lieu of Twitter. And, when you're ready, embrace Twitter but develop a way to filter your stream and vet your following for credibility. Spend a lot of time listening, processing, and actually reading what's being shared. And finally, don't get caught up in the noise. I encourage Twitter use among educators, but balk at the idea of it being necessary for all new and current teachers. It's simply a tool. A tool that I've embraced criticized and used to share many of these posts.

Before we rush our new teachers or students into the world of Twitter, let's take a moment to forge a personal, meaningful connection with them. Establish credibility and take time to listen and engage. In doing so you may just help find that student or teacher find their passion.

RYAN'S STORY

At Groton-Dunstable Regional School District, I encountered a similar burst of intrinsic motivation that left me, well, gobsmacked at what a student accomplished. I'll try and capture this story concisely.

On July 1, 2013, I started my tenure as the director of technology for Groton-Dunstable Regional School District. My first job was to provide advocacy and support for technology throughout our district. Groton-Dunstable is a district that consists of a wonderful, supportive community, progressive, dedicated educators and administration, and students who are bright and kind. Up until my arrival, technology was an afterthought. This is not to say that the tech team was not working hard or dedicated, but simply, there was no voice or leadership for technology in the district.

My first two initiatives included upgrading the network infrastructure districtwide and transitioning our staff from a first-class e-mail system to a Google Apps for Education environment that would include accounts for both teachers and students. I also purchased 600 Chromebooks for students to use across five schools. And this is where the story begins.

We were in the process of organizing 600 Chromebooks into groups and carts for each school to use. Plus, I wanted to match the serial numbers on each device with a cart. When you enroll Chromebooks, they enroll but are not grouped. (**NOTE:** *There may be a way of automatically enrolling into specific groups, but I had some inconsistencies with auto-enroll.*) So the solution was to group the Chromebooks into 25, enroll them, and then plug them into carts while documenting the serial numbers. A cumbersome process, nonetheless.

When I arrived at Groton-Dunstable Regional High School later that week, I was greeted by some of the Tech Task Force students. The Tech Task Force takes the help desk model I created at Burlington High School and presents it with a different name and schedule.

I walked in and noticed Ryan scanning the back of the Chromebooks. To me, it looked as if he was taking a picture of each device's serial number and bar code. He wasn't. He said

> I actually created a script with Python that uses an Android API for a bar code scanner that will scan the device's bar code and push it directly to a CSV file.[5]

Of course you did.

He did this on his own, without any demand from us. This was not homework, the state or federal government will not test him on it, and he did not receive a rubric or a grade. Ryan simply saw a problem and developed an efficient solution using a skill set that in many schools is not being taught. And I'm not referring to computer science, but simply time to create, develop, and explore beyond a common curriculum. Ryan saved our tech team a few days' worth of work and impressed me beyond anything I expected to see that Friday morning.

Ryan is not common and does not fit into the Common Core curriculum. Ryan has raced beyond what our federal government deems "the top." Most ETS tests are beneath Ryan. And, while I understand that not all students are like Ryan and the moment I witnessed was very unique, it doesn't create an excuse for rethinking and redesigning our education system. America needs a system that fosters creativity, exploration and discovery, mistakes, and innovation. That's a system that we owe our students.

Again, these courses and stories were not possible because we were lucky enough to have 1,000 iPads at the school or a half a million dollar technology grant, but simply administration and educators who were willing to push forward with and support progressive teaching opportunities. That's it. The technology is only a fraction of this puzzle and can never replace good teaching.

Finally, I want to share an experience that involved students I taught at Burlington High School. This next story was one that was never fully realized, but the experience was amazing for the students who were a part of it.

Burlington High School students had the opportunity to visit Google offices in Cambridge, MA. The purpose of the trip was to show students interested in computer science what they could potentially do with a computer science degree and present them with an opportunity to learn from some of the best computer scientists in the world.

Students were greeted by three developers—Jessica, Adam, and Dan—from Google, and they presented us with a brief background of the company and an overview of Google's history. We toured several areas of the office, and students made note of the lack of cubicles and the transparent working environment. Employees were not isolated from each other, nor did walls partition them. Workspaces were open and visible, enabling a collaborative environment. Employees moved around freely and took occasional snack breaks.

Students also took note that Google employees are never too far from food and that the food choices were color coded for their nutritional value. When it came time for lunch later in the day, students were impressed by the abundance of healthy choices available for lunch. However, it was sushi day, so most students opted for the mac and cheese.

Not long into the tour one student asked, "Why are schools so disconnected from how people work on a daily basis? Why can't schools look more like this office?" I didn't have an immediate answer because I have been pondering the same question for years. I reminded this student that a Google office is a small sample of how things occur on a daily basis at most companies, but I reinforced how committed Google is to providing the best environment for productivity and efficiency for all of its employees. Apparently Google is on to something.

After the tour, students sat down in a conference room with three Google developers and a Chrome OS developer to brainstorm their ideal computer science course. Before we started, I shared with students that we were in the drafting phase of putting together a hybrid course, tentatively titled "Google Academy," that will be co-taught by the three Google developers in the room and a Burlington High School teacher.

Here is the draft of the course description.

Google Academy: A Hybrid Learning Experience

Professors:

Meeting Time: TBD and online M-F

Meeting Location: TBD

Course Number: TBD (500-900)

Course Description

The Google Academy will be a unique experience that examines a variety of topics in computer science and explores several languages such as Python, C++, Visual Basic, etc. Beyond the programming aspect of the course, students will participate in an authentic, collaborative environment that promotes transparent, engaged learning. Students will learn first hand what it takes to work and thrive in a major company while learning how to manage time and projects independently.

This course will commence both online and face-to-face. The Google Academy will be co-taught by multiple Google programmers and one Burlington High School teacher. The course will also require bi-weekly participation at the Google offices in Cambridge. The Google Academy will require the students to work independently, responsibly and manage their time and assignments throughout the duration of this course.

Learning Pathways

Since this is a hybrid-learning course, primarily taught remotely, each student will set out on a unique pathway throughout the course. Initially, students will be introduced to the structure of hybrid learning environments and the expectations that come with this type of learning.

DESCRIPTION	COMPLETION
Pathway 1	
Pathway 2	
Pathway 3	
Pathway 4	

Hybrid Learning Expectations

1. Students must maintain a daily journal that will chronicle their progress and serve as the reflective piece of this course. There are no defined length or content requirements; however, students should synthesize their learning with their progress and the products they create. Moreover, this journal will be a living, sustainable history of students' learning. Secondly, the journal will serve as a digital resource that will explain a process or a programming language. Students will then organize pieces of their daily journal on a wikispace.

2. Each student will embark on a learning pathway selected by the student. Once a learning pathway is determined, students will work toward a goal set forth by the student and approved by the professors. Each student will submit a learning pathway proposal to the professor.

3. The learning pathway proposal will serve as the binding agreement

between the student and the professor that will guide the student through the first few weeks of the course. This learning pathway proposal must include the following items:

a. Goal or objective
b. Expectations of the student during the pathway
c. Timeline for completion
d. Answers the question: How will my work contribute to the greater good of society and innovation?
e. Demonstration method

4. At the conclusion of each learning pathway, students will be required to assemble a panel for a demonstrative presentation. Students must have two faculty members and one administrator present for their pathway demonstration. Each student should write letters to their prospective panelists addressing the subject, date and time of the demonstration. Students must also complete an abstract for each pathways demonstration.

5. Before submitting letters to prospective panelists, students must author an abstract for each learning pathway demonstration they conduct throughout the semester. The abstract should consist of one, concise paragraph that touches upon the specifics of their pathway demonstration.

Grading

Students will be graded on the content of their daily journals, their progress in their learning pathways and ultimately, in their learning pathway demonstration.

TYPE	CRITERIA FOR GRADE	100-90	89-80	79-70	69-0
Journal	Each week the student presents thorough journal entries that serve as a intuitive timeline of the work each student is completing. The journal is specific, comprehensive and reflects on an ultimate theme or goal. Student displays proficiency in the conventions of the English language to convey the innovative process.				
Participation and progress	The student completes his or her journal on a regular basis, communicates regularly with the professors and uses hybrid learning time effectively. Effective use of time can be seen in the journal and reinforced in the product goal each student has set forth.				

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Pathway Demonstration	The pathway demonstration presents a comprehensive look at the student's learning progress from beginning to end goal. The student may have not met the desired goal, but presents evidence for falling short of the goal and a prospectus for reexamining that goal in the next phase of the course. The student's presentation meets the learning objective or goal set forth by the student and approved by the professors and addresses the question: *How will my work contribute to the greater good of society and innovation?*

Source: Groton-Dunstable Regional School District

Once we described the potential course, we asked the students how they wanted to structure the course and what they wanted to learn. Students began listing areas of interest in the context of computer science, ranging from open source coding to coding games and iOS applications. It was great to hear students discuss what *they* wanted to learn as opposed to hearing what they *have* to learn.

Students generated ideas that filled two whiteboards. The room was filled with conversation and questions. It was rewarding to sit back and watch students casually interact with these engineers and ask them questions about what it takes to get to where they are in their careers. It was one of those moments as an educator where you see the great potential for our schools and our students.

Students left excited and eager to hear more about the course that they just helped design. They were also excited about the free Pepsi "Next" they obtained from the vendor on the street pitching the new soft drink to pedestrians.

I'm excited that my district and administration are open to the opportunity for connecting with the business sector to give our students a purposeful learning experience. I'm grateful for the connection I made with three generous Google employees willing to volunteer their time to guide our students through this course. I hope this is a trend that catches on in the education community—a trend that

enables more schools to embrace, not limit, technology opportunities that connect students with the community and provide purposeful learning experiences.

Reflecting on the evolution of the student Help Desk course makes me proud. The students who had the opportunity to take this course not only learned about technology in education, but they also have developed critical thinking skills, writing skills, troubleshooting skills, and customer service skills. Some Help Desk students went on to majors in information technology, computer science, and so on. Other students pursued concentrations completely outside of technology. Regardless of their path, they received an experience that touched upon a variety of skill sets.

This course and its effectiveness come down to a simple word that I have mentioned several times in this text: trust. Sometimes it's not easy for adults to realize that students, in some regards, know more about a specific subject than they do. Personally, I've learned a lot from the Help Desk students I have encountered. They never ceased to impress our school community and me. I encourage you to borrow or adapt the resources I have included in this chapter and propose this course in your district. Also, this is not solely limited to secondary students (9–12). In both of my experiences, this course was adapted by each middle school. I could even envision this course working at the elementary level with some major differences in access and focus. Regardless of the grade level, take the time to strongly consider adopting a student-led Help Desk course. The benefits will resonate across the district and serve as a viable support line for district and school technology issues.

ENDNOTES

1. http://bpsedtech.org/
2. http://edcampxedu.org/
3. https://twitter.com/dvillanojr
4. http://www.mobileaware.com/
5. https://bitbucket.org/rleonard/chromebook-scanning-app/overview