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The cover photo is The Ohio Statue University Marching Band and the Ohio State School for the Blind performing "Script Ohio" at the halftime show for the The Ohio State University Buckeyes versus the Florida A&M Rattlers football game. The script of O-H-I-O was spelled out in braille by the OSSB band and The OSUMB made another script.
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While this issue is being published in January 2014, I am taking this opportunity to address the organization one last time as the president of DVI. I have been a member of DVI since 2000 when I entered the field of special education for students with visual impairments. In 2002, I attended my first CEC Convention in Manhattan, New York where I attended my first DVI General Business Meeting. It was there that my mentor, Dr. Mary Jean Sanspree, introduced me to many leaders of in the field, people who literally wrote every textbook and article I had been reading in my coursework. To be honest, I was in awe!

At that meeting, I met with my fellow students in attendance and was elected as the student ambassador to the DVI Board. So the next day I was asked to sit in a meeting with other leaders as a peer. It was daunting but exciting at the same time! I was part of something bigger than myself and that was exciting. So I started a walk within DVI that has led me from the student ambassador to a director to treasurer to representative to president-elect, president, and as of January 1, 2014, past-president. During that time I have had
the pleasure of working with some of the most intelligent, energetic, passionate, caring, and loving people that I have ever known. It has been truly an honor to sit beside these people and work to support the wonderful professionals that serve individuals with visual impairments and deafblindness.

I could spend this space writing about the accomplishments during these past two years. However, I see no point in that at this point. The division is doing well but there is still much work to do. Rather, I would like to thank everyone for being a part of this organization. Your membership demonstrates your dedication to being a professional educator. It is this type of dedication that you show daily in your efforts to serve students with visual impairments and deafblindness. That above all else should be commended! Thank you for everything you do! What you do does matter!

So now I humbly step away from my position of president and move on to the past-president position. As the division transitions, be assured that the leadership is in good hands. Dr. Diane Pevsner has now taken the role of president with Dr. Tiffany Wild as the president-elect. With these two at the helm along with strong new members of the DVI board, the organization is in very capable hands! I see wonderful things in the future for our division!
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Message from the Guest Editor

Tiffany Wild, PhD, Assistant Professor at The Ohio State University

Welcome to the fall issue of DVIQ. It has been an honor and privilege to serve as guest editor. I am excited to share with you the articles printed in this edition.

We begin by remembering the life of a pioneer in our field who recently passed away. Dr. Abraham Nemeth passed away on October 2\textsuperscript{nd}, 2013. I want to pay tribute to his service and impact on our field by reprinting a timeless interview that he gave to Caryn Navy. This article was printed in the Future Reflections Special Issues: A Celebration of Braille. We thank your colleagues at the National Federation of the Blind for allowing us to pay tribute to Dr. Nemeth with this historical account of his life.

You will also find additional moving and motivational interviews brought to you by Ms. Farrand in
this issue. One is with a young woman who is visually impaired and has been extremely successful in life. She has a message for not only educators but for all whom you teach. In addition, you will find an interview with Ms. Cary Saxton, a teaching and marching band assistant at the Ohio State School for the Blind.

We highlight the work in the deaf-blind community by bringing you two informative articles. Dr. McCarthy and Ms. Bohlen provide information regarding the use of the K-Sonar for individuals who are deaf-blind and Dr. Parker and her colleagues provide resources for improving services for the deaf-blind through the intervener services initiative.

Fall brought about the celebration of the 50th Anniversary of the University of Pittsburgh training program. Dr. Zimmerman has written an article about this landmark occasion.

Ms. Croyle has written the last article in this issue which is a celebration of a new initiative in Honduras. She is working to ensure that all students are educated in Honduras.
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PROGRAM IN ORIENTATION AND MOBILITY (O&M)

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The Ohio State University Program in Orientation and Mobility is a 15-month course of study that provides instruction leading to licensure as a Certified Orientation and Mobility Specialist (COMS).

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The History of the Nemeth Code: An Interview with Dr. Abraham Nemeth

by Caryn Navy


Editor’s Note: At the age of 90, Dr. Nemeth is still active physically and mentally; he works on Braille codes, travels, speaks (and tells terrible--and terribly funny--jokes), and is truly an inspiration and role model for blind youth everywhere. Here is the 1991 interview in which he explains to Caryn Navy (who is currently with Duxbury Sys-
tems) how he came to invent his math code:

Nemeth Code is the code for mathematics and scientific notation in North America. During my years of studying and teaching mathematics, I developed a great respect for Dr. Abraham Nemeth, who had developed this Braille code. He has had a very active academic career in mathematics and computer science, and he remains very active in his retirement. I was delighted that he agreed to talk with us about the background of the Nemeth Code and about himself.

Q. How did you get involved with developing the Nemeth Code?

A. I began working on my Braille math code in 1946 or 1947. At that time I had a day job at the American Foundation for the Blind (AFB), and I was taking night classes in math at Brooklyn College. Boys were returning home from World War II and going back to school. Many of them had passed Calculus I before the war and were now taking Calculus II. After that long interruption they needed some extra help. There was a room with a large blackboard where volunteers helped them with their math problems. Each student stationed himself at one panel of the blackboard and wrote out the problem he wanted help with. I was one of the volunteers. I asked the student to read me the problem, and then I worked out the solution on the blackboard. I didn’t find it difficult to write on the blackboard. Apparently the chairman of the
math department happened to observe me and was impressed. One day I received a telegram from him asking if I could replace a member of the math faculty who was ill. The telegram asked if I could start next Monday. I said yes. When I wanted to take notes, I needed a way to write things down. At the time people used the Taylor Code from England for writing mathematics in Braille. I thought that the Taylor Code used too many grouping symbols. I had already come up with rules to tell my readers how to read mathematics aloud to me. I began working on a Braille code which simulated my rules for speech. For example, when you say “x to the n power,” the phrase “to the” means “begin a superscript,” and the word “power” means “return to the baseline.” So in my Braille code I created symbols that mean “begin superscript” and “return to the baseline.” My personal code for Braille mathematics began to evolve. I used it for my work in calculus and statistics.

Q. Before you tell us how you came to share your private Braille math code with the rest of us, I’d like to know how you started taking evening math classes at Brooklyn College.

A. I was always interested in math. I went to the New York City public schools, and I spent a lot of after-school time at the Jewish Guild for the Blind. I had a good buddy there who was younger, and I showed him a lot of math. When he got to high school, he took a math placement test. The result
was no surprise to me. It showed he knew a lot of algebra and could skip the first algebra class. That was the first case of advanced placement I ever heard of. Anyway, I always liked math. But various counselors told me that I couldn’t have a career in math because I was blind. I heard this from so many counselors that I believed it. After all, there’s a saying, “If three people tell you that you’re drunk, you’d better lay down.” So I majored in psychology. I got a B.A. in psychology from Brooklyn College and an M.A. in psychology from Columbia University. But it wasn’t so easy to get a job as a psychologist either. I got a job at the AFB but not as a psychologist. My first wife, Florence, who died in 1970, knew how much I loved math. She asked, “Wouldn’t you rather be an unemployed mathematician than an unemployed psychologist?” So I started taking math classes at night at Brooklyn College and then got the teaching position there. I worked toward a Ph.D. in mathematics at Columbia University. I got a mathematics teaching job at the University of Detroit and finished my Ph.D. at Wayne State University in Detroit.

Q. How did your Braille math code become an official code?

A. Another blind employee at AFB was Dr. Clifford Witcher, a physicist from Columbia University. One day he asked me if I had a table of integrals in Braille. I said that I had one, but it was in my
own private Braille code. So he asked me to teach him my code. When I showed him the code, he really liked it. Dr. Witcher happened to be a member of the Mathematics Subcommittee of the Joint Uniform Type Committee. This committee, an ancestor of BANA, was responsible for Braille codes in the U.S. and England (the word “Joint” referred to the U.S.A. and England).

[Editor’s Note: A table of integrals is a long list of formulas for performing a calculus operation called integration. A table of integrals is part of the holy liturgy for calculus students, engineers, physicists, and many others.]

Q. This really brings back memories for me. When I was a freshman in college, my new friend, David Holladay, asked me if I had a table of integrals in Braille. I told him that my Braille calculus textbook had a table of integrals at the end. He said that he had a much better one in print and wanted to Braille it for me over Christmas vacation. He asked me how the Braille math code worked and spent half an hour taking one page of notes on Nemeth Code. He took my Perkins Braille writer home over the vacation and did a really good job of Brailling his favorite table of integrals. Anyway, what happened after Dr. Witcher became a fan of your private Braille math code?

A. Dr. Witcher asked me for a document proposing my Braille math code to the Joint Uniform
Type Committee. Various members of the Mathematics Subcommittee were supposed to write different parts of the official code. But they ended up using my proposal, with minor editorial changes, as the official code book. That was the Nemeth Code, 1952 edition. It was published by the American Printing House for the Blind (APH). In 1956 they reorganized the code book. They made a separate section at the back of the book with all the rules not needed until after tenth grade. They soon realized what a mistake that was. The whole math curriculum changed when the U.S. wanted to catch up with the Russians after the Sputnik launch in 1957. Set theory was moved into the elementary school curriculum, but the set theory symbols were at the back of the Nemeth Code rule book.

Q. If Nemeth Code was proposed to the Joint Uniform Type Committee for the U.S. and England, why don’t they use Nemeth Code in England?

A. I don’t know. At some point the Braille Authority, with only three members, became responsible for Braille codes in just the U.S. Later they added Canada, and it became BANA (the Braille Authority of North America). I think they should add New Zealand and Australia to make it BANANA.
Q. What were the other revisions to the Nemeth Code?


Q. Were there any major changes in these revisions of the code book?

A. In 1965 we got rid of a rule about using two spaces to switch between text and mathematics. We also made parentheses more consistent. In 1972 the changes were noticed by transcribers but probably not by anybody else. Since 1972 there have been two addendums, for key caps (symbols for keys on a keyboard) and for ancient numeration systems.

Q. When will the Nemeth Code be finished?

A. When will mathematical notation be finished? The purpose of changes is improvement, not changes. Mathematicians are intrinsically lazy creatures. They spend years trying to find an easier way to do things.
The Art and Science of Teaching Orientation and Mobility to Persons with Visual Impairments, Second Edition

By William Henry Jacobson

This popular and classic text, used both in the United States and throughout the world, has been updated for the 21st century and is an invaluable guide for working with students of all ages. It details orientation and mobility techniques and explains how to provide effective instruction in one complete manual for the beginning O&M instructor that is a reference for the experienced practitioner as well.

The second edition of The Art and Science of Teaching Orientation and Mobility:

» Provides step-by-step presentation of each O&M technique and describes in detail how to individualize and teach each one.
» Outlines the scope and sequence of a complete O&M curriculum.
» Offers a guiding philosophy as well as principles and strategies for effective teaching.
» Includes a new chapter on assessment with essential assessment checklists for children and adults.
» Provides more extensive content on today’s O&M instructional issues, such as street crossings and the current, more challenging traffic environment.

Introduction
Unit 1 Guidelines for Instruction
Chapter 1 The Teaching of Orientation and Mobility
Chapter 2 Assessment: O&M Skills and Concepts
Unit 2 Essential Indoor O&M Skills
Chapter 3 Basic Techniques for Guiding a Person with a Visual Impairment

Chapter 4 Self-Protection Techniques: Moving through the Environment Independently
Chapter 5 Basic Long Cane and Self-Familiarization Skills
Chapter 6 Advanced Indoor Orientation and Mobility Skills
Unit 3 Outdoor Skills and Refinements
Chapter 7 Basic Outdoor Orientation and Mobility Skills

Chapter 8 Intermediate Outdoor Orientation and Mobility Skills
Chapter 9 Advanced Outdoor Orientation and Mobility Skills
Unit 4 Additional Considerations for the Specialist
Chapter 10 Special Situations and Conditions and Mobility Devices
Chapter 11 Creative Approaches to Teaching Orientation and Mobility
Chapter 12 Professional Issues

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“Seeing the Person First”: A Heartfelt Interview

Kathleen M. Farrand, M.Ed., Doctoral student
The Ohio State University
farrand.9@buckeyemail.osu.edu

Two years ago, I was listening to a speaker discuss her life story with a group of Early Childhood M.Ed. students. The speaker was Katie Robinson. Her frank perspectives and discussion of her school experiences, as a child with visual impairments and how she preserved and overcame some of the hurdles, are some of the reasons that inspire me to continue to pursue a career in the field of education.

Katie Robinson is an Accessible Materials Production Specialist at the Center for Instructional Supports and Accessible Materials (CISAM). Her desire to help others with visual impairments is unmistakable. This article features the report of an interview with Ms. Katie Robinson.

Q: Tell us about yourself. What is your current position? How old are you?

Katie: My name is Katie; I am 23 and I have Oculocutaneous albinism type 1. I work as an Accessible Materials Production Specialist at the Center for Instructional Supports and Accessible Materials (CISAM). I am a certified literary braille transcriber; I produce braille, large print,
digital and audio materials for Ohio students with print disabilities, including those with visual impairments.

I like to cook but prefer baking, especially cookies. I make a mean pumpkin chocolate chip cookie. I enjoy canoeing/kayaking and listening to nature. I like to crochet, but haven’t quite mastered it yet. I like to read; the best book I recently read was *The Fault in Our Stars*. I am active in Bible Study Fellowship and try to live my best as a Christian woman. I enjoy spending time with people I love.

**Q:** How has your visual impairment impacted your education through the years?

**Katie:** My visual impairment has impacted my education in different ways as I have aged. I received very little assistance in elementary school and suffered academically and socially. I was a very angry child who dared anybody to look twice. I felt like I was less of a person because I couldn’t participate and constantly felt left out. My classmates did not understand my differences and bullied me. I had a few friends but overall had a low morale.

In middle school, my mother moved me to the Ohio [State] School for the Blind. I did a complete 180 in my time there. I learned to read braille and had access to large print. I made many lifelong friends. I learned to utilize technology to lead [an] easier, independent life. I played sports and excelled as an athlete; this has [led] to a lifetime of exercising for enjoyment. My view of myself and the world greatly improved. I became
confident and learned to advocate for myself.

While in high school, I attended the Delaware Area Career Center half of the school day during my junior and senior year. I specialized in the Cisco Networking Academy; I also studied computer programming and graphics design. When I applied to the career center one of my teachers said, “I’m not quite sure how to teach you.” I said, “We can figure it out.” And we figured it out quite well. I made friends in my class and did everything that my sighted peers did. My friends were [led] by my example. Blindness is nothing to fear; I can do something if I find a way.

I worked with Cisco to help test a screen reader accessible online course so others who are blind can participate in Cisco online courses. Most of our work was computer based, so I did the same work, at the same time, in the same way, as my peers.

I received five scholarships and pursued my first degree at DeVry University. I was part of [an] accelerated program with a full course load. DeVry had not had a blind student in over 10 years, so any accommodation I received was because I knew how to ask. Textbooks were difficult to obtain; we worked with many publishers and an inaccessible online textbook reader. I enjoyed the new academic challenge college presented. Other students weren’t quite sure what to think of me. Some took my example of “[it’s] not a big deal.” Some seemed afraid of me; a few questioned my academic competency. A few times I heard, “You did that? How? You can’t see!” Most
of my professors were ready to help me, but I had to be able to tell them what exactly I needed. I graduated from DeVry in 2011 with honors holding an Associate of Science in Computer Networking Systems. I will be going back to college in the future; at that time, I am sure new challenges and opportunities will present themselves.

Q: What do you consider your greatest accomplishments?

Katie: I am alive today; few of us know when our last day here is. I try to focus on small accomplishments, I made my friend laugh when she was sad, or I memorized that new route to walk. Going to college and graduating has been a big accomplishment, because for so many years it looked like I wasn’t going to go anywhere in life. Recently, I passed my literary braille transcriber certification; with this I can give braille to more students.

Q: You have had many successes in your life. What motivates you?

Katie: God and the love of the people around me. God gave me this hand, whatever cards I get; I must play them to the best of my ability. To appreciate success, you must know failure. To appreciate love, you must feel lonely. I am motivated by God, I am here to bring glory to him, not myself. I have an ability to help others; therefore, I shall.

Q: What advice do you have for teachers of students with visual impairments as we begin a new school year?

Katie: We are people, people who happen
to have a visual impairment. See the person first, not the blindness. I love it when friends leave me in parking lots. They aren’t being unthoughtful; they are thinking of me, not blindness.

Literacy is important - braille and large print. Reading is a key piece of life. Make it fun; find ways to encourage students to read. Technology allows [people with visual impairments] to lead a normal life. Learn all you can to share with your students.

Q: What advice do you have for students with visual impairments as they begin a new school year?

Katie: Accept your blindness; the sooner you do, the sooner those around you become more comfortable. I make blind jokes about myself all the time, showing others I am comfortable and that it isn’t a big deal.

Read - you really are going to need it later in life. Read about things you are interested in. Use your technology; it will help you do the same things your sighted peers do.

Q: What advice do you have for students with visual impairments as they transition to life beyond school?

Katie: Nobody owes you a thing; the world will not hand you anything. If you want something, you should work hard so you can appreciate it. It feels better to earn something than to accept a handout. Play to your strengths, be flexible, and continue to learn. Learning is lifelong. The only time you stop learning is when you stop breathing.
Teaching Listening Skills
New Professional Resources from the American Foundation for the Blind

Listening skills are a crucial, but often-overlooked area of instruction for children who are visually impaired and may have multiple disabilities. They relate to the expanded core curriculum for students and are essential to literacy, independent travel, and sensory and cognitive development. The American Foundation for the Blind provides comprehensive professional development resources on this critical topic.

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Teaching Listening Skills to Students with Visual Impairments
Lizbeth A. Barclay, Editor

*Learning to Listen/Listening to Learn* is the first comprehensive book to address the systematic development of skills in listening for and interpreting auditory information. It includes:

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Liz Barclay

*Listening and Technology*
Stephanie Herlich and Jerry Kuns

*Listening Skills for Orientation and Mobility: Teaching Use of Auditory Space Perception*
Maya Delgado Greenberg and Wendy Scheffers

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Expanding possibilities for people with vision loss
On September 21, 2013 the only blind marching band once again performed a halftime show during a football game. However this time it was a bit different. Normally the Ohio State School for the Blind (OSSB) Marching Band performs halftime shows for the Ohio School for the deaf. However this particular Saturday they marched a half-time show with The Ohio State University Marching Band (OSUMB) at the “The Shoe” during the halftime show for The Ohio State University Buckeyes versus the Florida A&M Rattlers football game. The famous “Script Ohio” was performed as usual each Saturday. However this particular Saturday it looked a little different. A double O-H-I-O was created on the field; one in script by OSUMB and one in braille by OSSB. Click on the following link for video footage of the halftime show featuring the OSSB marching band: http://www.youtube.com/watch?v=2UhlcLOVUVk

Cary Saxton was on the field during this historic event in the history of “Buckeye Nation”.
She is a teacher at OSSB and a sighted guide for the school’s marching band. I decided to interview Cary to share with DVIQ readers her experience working with the OSSB marching band and hearing the cheers of the crowd side by side with her students. Below is the transcript of that interview.

Q: Tell us about yourself. What is your current position? How long have you been teaching and working with the school’s marching band?

Cary: I am currently the English teacher for grades 7 – 12, and this is my 2nd year. I joined up with the marching band at the beginning of the school year last year, so technically I’ve been doing that for two years as well (although I did not attend band camp my first year). I happened to be working late at school one night last fall and Carol Agler [the OSSB band director] was short on marching assistants… and the rest is history.

Q: What is your role and responsibilities as a sighted guide for your school’s marching band?

Cary: My main responsibility is to make sure our musicians don’t run into each other! In other words, they do the hard work of playing and marching and I just help them get to the right marks on the field.
Q: How did the opportunity come about for your school's marching band to participate in the halftime show at The Ohio State University?

Cary: I'm not sure exactly how this transpired, but I know our director Carol Agler has had a great working relationship with Jon [Jonathan] Waters [OSU Band Director]. Their [OSU] band members have always enjoyed coming out to the school and mentoring our kids, and we go to their practices during band camp. It's a great symbiotic relationship. The college kids seem to get a lot out of helping our students as well.

Q: What has this experience meant to you as a teacher?

Cary: Assisting with the band has felt very similar to coaching for me. Where I used to teach in Michigan, I coached a lot of different sports, and I enjoyed seeing my students in a different setting. Interacting with your students outside the classroom just adds another dimension to the rapport you have built with them. It's a real sense of camaraderie. And I think that sense of community extends itself into the classroom.

Q: What was it like being on the field with your students in front of over 100,000 cheering fans?

Cary: Unfortunately, it was indescribable. I say unfortunately because as I travel around with
the band, I think it’s one of my main jobs to describe what’s going on around us. I think this act of narration is very powerful for the students who would feel sort of lost otherwise. After this experience, I just couldn’t find the words to describe in visual terms what we had just been through. I know they were able to hear the cheers, but I’m not sure some of them fully grasped the idea of 100,000 people watching them.

Q: What advice would you have for students with visual impairments interested in joining their schools marching band?

**Cary:** Finding a good partner to assist them is key – whether it’s a peer, a teacher, or another adult. They need someone they can trust and who can read marching band drills. If they find a capable assistant, I don’t see any reason why they couldn’t participate in their school’s marching band. It’s a very reasonable accommodation.
Bringing Accessibility to the Powerful TI-84 Plus Graphing Calculator

By Ken Perry, Technology Project Leader
Edited by Denise Snow, Research Assistant
American Printing House for the Blind

The Orion TI-84 Plus Talking Graphing Calculator is an innovative marriage of traditional, dependable technology and innovative accessibility. The design goal and driving force for Orbit Research and the American Printing House for the Blind (APH) in the development of the Orion TI-84 Plus was simple - make the TI-84, one of the most popular graphing calculators in schools, accessible for students who are blind or who benefit from auditory feedback. To do this, we had to design and add a small extension, called the Orion, to the TI-84.

From left to right, the Orion TI-84 Plus and the original TI-84 Graphing Calculators
As you can see in the previous photo, the two calculators do not look very different. The variation is the top part (the Orion), which has all the accessibility features. The following is a rendering of the Orion accessory buttons.

The Operation and Navigation keys on the Orion

The beauty of the design is that the Orion does not change the way the TI-84 operates; it simply enhances the operation of the calculator for users who have vision impairment. A math or science instructor does not have to learn anything new in order to operate the calculator and can, therefore, continue to teach the same math problem to every student in the same manner.

In an online article in The Atlantic titled “What Your Old Graphing Calculator Says About Technology,” Alexis Madrigal considers the reasons why traditional graphing calculators are still significant in today’s classrooms. One important example he presents is, “teachers tend to recommend a particular calculator or set of calculators, and the more of their students using the same tool, the easier it is to teach them.” This idea exemplifies the objective behind the creation of the Orion for the TI-84. Now,
students who are blind and visually impaired can take the same STEM (Science, Technology, Engineering, Math) courses as their sighted peers, using the same standardized technology, through the addition of accessible features.

The manual for the Orion is a little over 20 pages and can be read in a single sitting. It can be accessed online at APH Orion TI-84 Plus User's Guide or via the USB flash drive that is included with the Orion TI-84 Plus. Additionally, APH has made the 400+ pages of TI-84 documentation from Texas Instruments™ accessible and converted it to HTML. Lastly, APH partnered with Learning Ally™ on recording the entire TI-84 manual, which can be found online at the APH Orion TI-84 Plus Resources page; or if users have a portable DAISY book reader with a USB port, they can insert the included USB flash drive and listen instantly to the TI-84 manual.

The Resources page also has helpful videos and tutorials, and additional resources from third party users who have already begun adding to the documentation. More importantly, there are thousands of searchable online tutorials (many of them accessible) for the original TI-84 that are just as relevant for the Orion TI-84 Plus. See the Suggested Resources at the end of the article.

One example of a typical exercise that a student might perform on the Orion TI-84 Plus is the graph of a sine wave, which is done by graphing \( \sin(x) \). Opening the link allows you to hear how the Orion TI-84 makes a graph accessible. As the playback point moves up and down on the Y-axis or right and left on the X-axis, the tone level adjusts and moves from speaker to speaker, indicating where the point is on the coordinate grid.

After a graph is created, it can be explored for more information. This example is a walkthrough of the graph by tone and speech, finding a certain Y value at a given X, and finding the max or min part of a graph by using tones and then quickly switching to speech mode to get the values. When finished with an audible exploration, TI Connect™ software, a PC, and a graphic embosser can be used to get a tactile printout,
which enhances the understanding of the graph for a user who is blind or who benefits from auditory feedback.

While making graphs is certainly the muscle behind the Orion TI-84 Plus, it is only one component. It also has functions for basic math, finance, statistics, matrices, trigonometry, geometry, calculus, and a programming language that is easy to learn.

The greatest obstacle for most students who are blind is there is not a way to check answers as easily or quickly as other students who are working the problems on paper. With the Orion TI-84 Plus, that is no longer the case. A student can enter a matrix into the TI-84 Plus, press the inverse key, and quickly obtain the answer, allowing the work to be checked immediately. Listen to this example of how to input and take the inverse of a matrix.

While the Orion TI-84 Plus is a programmable calculator (allowing users to test several answers while writing only one function), the first version of the screen reader written for the Orion TI-84 Plus does not currently fully support the programming feature. It will be better supported in future releases, because the goal is to make everything accessible. It is possible, however, to write and change programs to make currently available programs accessible. An example of how to program your TI-84 Plus to solve quadratic equations can be found at the Quadratic Equations on TI-83/84 webpage. The program can be altered to use a different output function and to print the text, allowing for review with the accessibility review functions. The modifications can be downloaded and accessed from this Quadrat2 zip file.

The Orion TI-84 Plus has over 400 internal functions, so it is hard to give a comprehensive overview of the device. The intention of this author is to give some insight into the power of this innovative and accessible version of an old, faithful tool in STEM education. The Orion TI-84 Plus stands as proof to technology companies that with a bit of effort and ingenuity, even complicated STEM tools can be made accessible and can help level the playing field in education for people with disabilities.
Reference


Suggested Resources

TI-Basic Developer: The TI-Basic Information Repository
Overview of Commands
http://tibasicdev.wikidot.com/commands

Math Teacher Link: University of Illinois at Urbana-Champaign
Basic TI-84 Plus Tutorial
http://mtl.math.uiuc.edu/non-credit/basic84plus/

Iowa Educational Services for the Blind and Visually Impaired
Graphing Calculators
http://www.iowa-braille.k12.ia.us/vnews/display.v/ART/526f1d96ac292

Calculator.maconstate.edu: Macon State College
Tutorial by Topic and Course
http://www.iowa-braille.k12.ia.us/vnews/display.v/ART/526f1d96ac292

TI Calculator Tutorials: Cape Fear Community College
Operations used in algebra and statistics
http://cfcc.edu/faculty/cmoore/TI-STAT.htm

Texas Instruments™: Education Technology
Student Zone

Orbit Research: News

American Printing House for the Blind, Inc.
APH Educational Research Department Annual Report 2013
http://www.aph.org/edresearch/ar2013/index.html
The Possibilities for Using K-Sonar with Individuals who are Deaf-Blind

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The two most popular mobility tools for individuals who are blind and visually impaired (VI) are canes and dog guides (Marston & Golledge, 2003). In addition to canes and dog guides, there are also a wide variety of electronic travel aids (ETA) which provide haptic or auditory feedback to students. Some of these devices are meant to be used as stand-alone devices; some of the devices are intended for use in conjunction with a cane or dog guide (Pun, Roth, Bologna, Moustakas, & Tzovaras, 2007). The K-Sonar is a device which uses sonocular perception to provide the user with increased information about his/her environment based on echolocation. This information includes object detection, distance from detected objects, and information about the makeup and texture of detected objects (Kay, n.d., Pun et al., 2007, Rotengen, Gelederblom, Soede, & de Witte, 2008).

The documentation which accompanies the K-Sonar when it is purchased from the American Printing House for the Blind (APH) specifically says that it is only for use by individuals with typical hearing. However, advancements in cochlear
Implant technology have increased the amount and quality of what individuals who are deaf and hard of hearing are able to hear (Dowell, Blamey, and Clark, 1995). Given these advances, we sought to determine if a student who is deaf-blind with a cochlear implant could learn to use a mobility device which relied on sound cues like the K-Sonar.

For this foray into teaching a student who is deaf-blind with a cochlear implant to use the K-Sonar, we selected an 18-year-old, male student who only had light perception and used a cochlear implant in one ear and a hearing aid in the other. Our first step in this process was to make sure the student was a viable candidate for learning to use the K-Sonar device. Most importantly, we wanted to know if the student could hear the sounds emitted by the K-Sonar. We gave the student three tests to determine if he could hear the sounds emitted by the device. For the first test, the student told us when he heard the device emit any sound at all. For the second test, we had him identify when the frequency modulations, which indicate distance setting, changed. For the third test, we had him indicate changes in the pitch of the sound emitted by the K-Sonar. The student passed all three tests with 100% accuracy. With the aid of his cochlear implant, he was able to accurately hear and perceive the K-Sonar. This alone was big news!

Previously, the only viable population for this device was believed to be individuals with typical hearing. Furthermore, the student may have been more accurate at describing the qualities of the
sound (pitch, etc.) without formal instruction because he has had his hearing tested so extensively since birth. The task of identifying, interpreting, and describing the sounds emitted by the K-Sonar is not wholly unlike the tasks an audiologist asks a patient to perform. Thus, the student's experience with hearing assessment may have benefitted his ability to identify and interpret sounds made by the K-Sonar.

Next, we had the student navigate an obstacle course to see how the student did without any training on the device. We set up common objects from the school in a hallway and had him tell us when he detected an object. We noted whether he found the object with his cane, with the K-Sonar, or not at all. Then we proceeded to teach the student how to use the device. After teaching him how to use the device, we had him navigate the obstacle course again. After instruction on how to use the device, he did much better. He found more of the objects with the K-Sonar than he did with the cane. After finding an object with the K-Sonar, he was able to confirm what he found and learn more about the object with his cane.

After some basic instruction in how to use the device, we had the student practice walking down the hallway identifying open doors/intersecting hallways using the K-Sonar. We thought this could be a useful skill for the student. That way, he could count the number of openings on the opposite side of the hall when traveling down the hall with the flow of traffic. The student was pretty
accurate at using the device for this purpose. After seven trials of using the device for this purpose, he was able to identify the number of open doorways/intersecting hallways with 100% accuracy.

In addition to the skills the student was able to perform with the K-Sonar, the student's O&M specialist identified several benefits of this device for her student. First, she noted that her student walked more slowly when using the device. She indicated this was a good thing, saying the student often walks very fast, bumping into people and objects, and the student sometimes hurts people when traveling at his usual speed. She also indicated the student spent more time exploring his environment when using the K-Sonar, which could lead to an enhanced knowledge and understanding of his surroundings. The K-Sonar provided the student with increased information and awareness of his environment. When the student held the K-Sonar across his body, he was able to obtain more comprehensive information about his environment. He obtained information about the path in front of him with his cane while obtaining information from his side with the K-Sonar. This led the student to discover objects in his environment about which he was previously unaware. This increased his curiosity. The student's use of the K-Sonar also increased his traveling efficiency (ability to count doors without trailing the wall/lockers). Part of the reason the K-Sonar increased the student's awareness of his environment had to do with his nontraditional grip.
on the K-Sonar. Rather than mounting the K-Sonar on his cane, he chose to hold the K-Sonar in his free hand. This allowed the student to sweep with the K-Sonar and point it straight ahead at belly button or chest level.

The O&M specialist expressed two concerns related to the device. She shared that the device resembled a gun when used by the student. The student prefers to use a thin cane without a golf grip, so mounting the device on the cane was not an option. The student held the device in his free hand. This was actually beneficial since it allowed the student to get information from his sides rather than just in front of him. However, when he held the device with his free hand, it did resemble a double-barrel gun. The student familiarized security in his school with the device so the resemblance would not cause a problem. Additionally, the O&M specialist found that the student’s ability to communicate with others was decreased when he was using the device. The student had trouble hearing what people said to him while using the device.

During introduction to the device, the student walked into a crowded hallway. The student commented that the device provided him with a lot of information about people in the hallway. He said he could tell when there was only one person crossing in front of him versus when there were multiple people moving in front of him as well as the speed at which people were walking. He had the O&M specialist put on the device while he mimicked the movement of people (one person
versus multiple people moving slowly versus quickly) with his hands.

The most noteworthy finding of the study was that this student who is classified as deaf-blind was indeed able to use the K-Sonar for additional information while traveling. He was able to use it to rather reliably detect hallways on the opposite side of the hall. This student has typically used the strategy of walking in the center of hallways, which can be dangerous for the student, passersby, and limits the tactile feedback the student gets from either wall when using on a cane. Another noteworthy finding is that the student traveled more slowly when using the K-Sonar in conjunction with a cane. Before the study began, the student’s O&M specialist indicated that one of her primary concerns for the student was that he traveled too quickly which was dangerous for him and the people around him. The student's pace was slower when he used the K-Sonar with a cane. This is likely because he is paying more attention to the objects around him, which are detected by the K-Sonar. This could also potentially keep him safer.

While this study is far from conclusive, the evidence that the K-Sonar can be used by individuals with cochlear implants is compelling. While the K-Sonar would not be a good stand-alone mobility tool for students like the one in this study, the population of individuals who are deaf-blind with cochlear implants might, in fact, be candidates for auditory mobility tools, like the K-Sonar. The student in this study indicated he intends to
continue practicing and learning how to use the K-Sonar as a tool to give him more information and increase his safety. The student’s O&M specialist concurred that it is good for him to have one more tool in his toolbox.

References


SAM is a kit for students with visual and multiple impairments and pre-school children with visual impairments who are just beginning to use symbols.

Games are used to reinforce the meaning of symbols learned in natural environments and to expand the use of symbols to communication contexts like books. In order to determine needs and plan instruction, SAM provides four assessments:

- **Symbol and Referent Analysis:** Common Words
- **Symbol and Referent Analysis:** Academic Vocabulary
- **Environmental Gap Inventory:** Missing Concepts in Common Environments
- **Curriculum-based Gap Inventory:** Early Academic Skills & Basic Concepts

[Image of SAM kit]

[Website link: http://shop.aph.org]
Deaf-Blindness has long been recognized as an extremely complex disability, not only because of the barriers that children face in accessing the world around them, but also because of the challenges it creates for educational systems. Over the past several decades, intervener services have become increasingly recognized as an important strategy for addressing these barriers and challenges for many children. Their purpose is to provide access to sensory information that would otherwise be unavailable to individuals whose hearing and vision are severely limited or absent. Although people who are deaf-blind may benefit from intervener services at any age and in any setting, the growth of these services in the U.S., to date, has focused primarily on their use in promoting a child’s learning and development in educational settings for students aged 3 through 21.

In educational settings, intervener services are provided by an individual, typically a paraeducator, who has received specialized
training in deaf-blindness and the process of intervention (NCDB, 2013). Working under the guidance and direction of a student’s classroom teacher or other individual responsible for ensuring the implementation of the student’s IEP, an intervener provides crucial access to information and communication throughout the instructional day and facilitates social connections and social and emotional well-being (Alsop, Blaha, & Kloos, 2000; NCDB, 2013). Intervener services are one of a range of critical individualized supports that may be needed for children who are deaf-blind. Interveners work closely with other educational team members and require ongoing support from teachers of children who are deaf-blind and other experts in deaf-blindness.

Unlike educational interpreters or mobility services, intervener services are very much an emerging practice in the United States and the infrastructure for providing them (e.g., recognition, training, supervision, job placement) is weak and varies significantly from state to state. It is estimated that fewer than 5% of children with deaf-blindness have intervener services (NCDB, 2012d) and no state education departments have personnel standards for interveners. The need to address the lack of infrastructure for intervener services in the U.S. was recognized by U.S. Department of Education Offices of Special Education Programs when, in the fall of 2011, the agency tasked NCDB with the development of recommendations for improving national, state,
and local intervener services. These recommendations have now been published (NCDB, 2012e) and implementation of them began in 2012.

The recommendations are designed to accomplish 4 goals: 1) increase recognition and appropriate use of intervener services for children and youth who are deaf-blind; 2) establish a strong national foundation for intervener training and workplace supports; 3) build the capacity of families to participate in decisions about intervener services for their children and in efforts to improve these services; and 4) sustain high-quality intervener services across the nation through the inclusion of intervener services in national special education policy.

Since they were published, NCDB, in concert with numerous partners, has begun work on key recommendations. The most intensive work thus far has been the development of open access intervener training modules, entitled *Open Hands, Open Access (OHOA) Deaf-Blind Intervener Learning Modules*. The primary purpose of the modules is as a resource for agencies or institutions that develop, host, or deliver comprehensive intervener training programs, but they will also be useful to other learners (e.g., parents, teachers, other service providers) who are not seeking to become interveners, but simply wish to increase their awareness and understanding of deaf-blindness and its unique intervention practices and principles in the U.S.
To address the challenge of building modules that are high quality, reflective of available research in deaf-blindness, and supported by the wisdom of practitioners and families, NCDB adopted a participatory method to systematically formulate a module development plan. Participatory methods for creating relevant learning materials for communities are not only respected by educational leaders around the world, but they are also a means of incorporating the wisdom, experiences, and passions of those who have been “walking the path” (Taylor, 2005). To begin, we solicited the counsel of multimedia module development experts from the University of Colorado, Denver, the IRIS Center, Vanderbilt University, and Perkins School for the Blind, to learn from their experiences and design a module template that reflected the best practices from adult learning theory. Next, we sought guidance from organizations with expertise in web-based accessibility including the Described and Captioned Media Program, the Carroll Center for the Blind, and DiCapta Accessible Communication Developers. From these ongoing collaborations, we are continuing to adapt the Moodle learning management system to serve as an accessible platform for engaging learners. Additionally, efforts were made to caption and describe materials so that the modules would be universally designed.

In October 2012, nineteen representatives from
the diverse network of individuals and organizations who work with children and youth who are deaf-blind were invited to identify and prioritize the themes for the first modules. The representatives included parent leaders, university personnel preparation representatives, and state deaf-blind project personnel. Using CEC’s *Knowledge and Skill Set for Paraeducators Who Are Interveners for Individuals with Deaf-blindness* as a framework, the advisory group outlined the following themes, which have become the first nine *OHOA* modules. These include:

- An Overview of Deaf-Blindness and Instructional Strategies
- The Sensory System, the Brain, and Learning
- The Role of Interveners in Educational Settings
- Building Trusted Relationships and Positive Self-Image
- Supporting Students’ Availability for Learning
- Understanding Communication Principles
- Emergent Communication
- Progressing from Non-Symbolic to Symbolic Communication and Complex Language
- Developing Routines and Calendar Systems

Since the initial advisory meeting, twenty-nine individuals led by five respected experts in deaf-blindness participated in virtual and face-to-face module writing meetings to weave together rich videos, readings, and learning activities into compact, cogent learning modules. (A short introductory
video may be found here: http://www.youtube.com/watch?v=Jxmv4TLRWrw. The first four modules in the series have been field tested, revised, and are already being used by several state deaf-blind projects and two university programs, one in the U.S. and one in Canada, to enhance their work with adult learners.

As the current set of modules is being field tested and revised, NCDB will concurrently work with the OHOA advisors and creators to develop seven new modules this year. Ultimately, the goal is to provide a foundational set of modules that may be used in concert with field-based internships by qualified programs in the field of deaf-blindness to increase the numbers of trained interveners in the U.S.

As exciting as the modular content may be, many have found that the true gifts of this process have come from the willingness of professionals and family members to share their best thinking and resources to create a tool that may be used by many. The OHOA modules are one piece of a larger systemic effort that requires ongoing partnership and action from the diverse and geographically widespread community that is committed to improving the lives of children who are deaf-blind. Though there is a significant amount of work to be done, it is with this spirit of collaboration that efforts to develop systemic support for interveners and students who are deaf-blind
moves forward. Ultimately, it is increasing the quality of education for students who are deaf-blind that creates an impetus and energy for the larger intervener initiative. We invite you to learn more about intervener services and to share your ideas by visiting:


The National Center on Deaf-Blindness (NCDB) is a project awarded to the Teaching Research Institute at Western Oregon University, funded under grant #H326T130013 from the U.S. Department of Education. However, this information does not necessarily represent the policy of the US Department of Education, and readers should not assume endorsement by the Federal Government. Project Officer, Jo Ann McCann.
A resource for the community, by the community. Coordinated by the National Center on Deaf-Blindness.

moodle.nationaldb.org
Celebrating the 50\textsuperscript{th} Anniversary of Vision Studies at the University of Pittsburgh

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The Vision Studies Program at the University of Pittsburgh (Pitt) is beginning its 50th year of preparing teachers of students with visual impairment, O&M specialists, and doctoral leadership personnel. The teacher of the visually impaired certification program began in 1963 and the O&M specialists program began in 1969, making the Pitt program one of the first in the U.S. to offer graduate level dual TVI and O&M certification. The program has prepared hundreds of highly specialized teachers and O&M specialists to serve the education and rehabilitation needs of children and adults who are blind or visually impaired nationwide. In addition, Pitt’s doctoral preparation program has fostered leaders in the field of blindness and visual impairment in all capacities of service, leadership, and research. Graduates have developed and enriched educational programs and practices; are authors and editors of respected publications; and also have established the need for ongoing research in the field and forged the agenda to address that need.
Professor Emeritus Ralph L. Peabody served as director of the program from its inception in 1963 until 1988. Prof. George J. Zimmerman became director of the program in 1988 and continues in that role today. Dr. Peabody received assistance from Dr. Mary Moore during many of the initial 25 years of the program, while Dr. Zimmerman received assistance from Dr. Lynn Fox for many of the past 25 years. It is also important to note the contribution of Dr. Bruce Blasch in the development of the O&M program in 1969. Despite the two different years in which the certification programs began, the program is celebrating both specialty areas as well as the masters and doctoral graduates this year. It is important to mention that the program could not have been able to achieve this milestone without the numerous part-time faculty members who have taught courses and supervised students in their clinical placements. All the Pitt grads have benefitted from their instruction and mentorship.

Throughout this upcoming academic year, the Pitt Vision Studies Program will be honored in a number of different ways. The first recognition will be the installation of a stone plaque on the Wall of Tribute at the Hall of Fame for Leaders and Legends of the Blindness Field at the American Printing House for the Blind in Louisville, KY. The stone plaque will be installed in time for this year’s annual APH meeting in October. An identical stone plaque will be hung in the Pitt School of Education. Graduates and friends of the Program
are being asked to help donate financially to the installation in whatever manner as possible. No donation is too small. For more information on how to contribute, visit http://www.aph.org/hall/dev_order.html or call Jennifer at 800-223-1839, ext. 393. APH will send confirmation of your contribution.

In addition the Program will be recognized at the annual VisionServe Alliance Executive Meeting that will be held in Pittsburgh in November. The Program will also be co-celebrating 50 years of O&M preparation, in conjunction with Florida State University and Western Michigan University, at the AER International All O&M Conference 2013 to be held in New Orleans in December. The Penn-Del Chapter of AER will also be recognizing/celebrating the 50th anniversary at their annual conference in April 2014.

Dr. Zimmerman is asking all graduates, friends, and former part-time faculty who served in the program throughout the 50 years to attend one of the conferences to be recognized and help celebrate this milestone of achievement.
STACS: Standardized Tactile Augmentative Communication Symbols

APH’s STACS Kit helps learning partners (teachers, parents, peers, etc.) teach a beginning standardized vocabulary to learners who have no means of formal communication. The STACS instruction manual and included online videos show learning partners how to implement symbols effectively as a part of their learner’s communication system.

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- Electronic (online) assessment forms

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“No pueden ir a la escuela. Estan ciegos.” (“They don’t go to school. They’re blind.”) These words were the force behind the Centro Integral Para La Inclusión Escolar (CIPIE). These words left an indelible impression on me. They were the words of a mother in a small shack in the mountains of Honduras in response to a question I asked her, “Where do your children go to school?” I was there as a volunteer to build schools with the communities in rural Honduras. Since that time seven years ago, I have been returning to Honduras every summer to identify children with special needs and get them connected with the support services they need. Unfortunately, these services are not always available. This prompted me to begin a more formalized investigation through a qualitative research study in the rural village of Santa Cruz de Yojoa, Cortes, Honduras.

The study involved three aspects: interviews, focus groups, and observations. Teachers, administrators, parents, and children participated in this process. We found a lack of educational services, a negative stigma at-
tached to students with disabilities and their families, and educators who were not prepared to teach children with disabilities.

Together with Schools for Children of the World (SCW) and Heart to Honduras, we began providing educational assessments and teacher/parent training on educating students with disabilities. Over the last two years, we (SCW, the mayor of Santa Cruz de Yojoa, the Director of Education, and the doctor of that village) have been working together to establish a resource center where children can receive the services they need in order to join the other children in the classroom and teachers can receive the training they need to work with all students.

We realized that by adding the service aspect of education to SCW, a school facility planning group, we would be facilitating change in more than a local Honduran community and foreign education system; we would be adjusting the typical operating process of SCW. We were attempting to establish an organization (CIPIE) within a Honduran community (Santa Cruz de Yojoa) within a North American non-profit organization (SCW). This was no small feat. The words that were spoken from the small shack in the mountains of a rural village in Honduras
were a powerful driving force that could not be ignored. We pressed on with confidence. In July 2013, we dedicated a new building, secured funding for teachers, and collaborated with government and education leaders at the local and national level. Today we are providing supportive and direct educational services for over 100 children identified with disabilities currently attending schools in the Santa Cruz de Yojoa municipio.
The goal of the CIPIE, through the collaborative efforts of SCW, the Ministry of Education, and the Santa Cruz de Yojoa community is to provide education for every child. This requires that we address how we provide specialized training for teachers, identification of which resources are needed, and how we can acquire those resources. In addition, it is important to include families of children with special needs in the school and the community. This will send the message that they are all welcome, in addition to fostering a belief that their children deserve to be educated.

**Plan for Change**

During the initial phase of interviews with parents, teachers, and community members, we identified underlying assumptions within the community that included: (a) children with special needs did not have the capacity to be educated; (b) teachers who believed these children could be educated, felt unprepared to educate them, due to lack of formal training; (c) the education system and government systems believed they did not have the knowledge or resources. These assumptions provided a negative cyclical effect within the community and the education system, allowing the situation to continue. These were strong forces with which to contend during this process. There were both internal (parents’, children’s and teachers’ beliefs) and external forces (lack of resources)
pressing on this change process. This has been a journey with many milestones to mark our path.

Table 1

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<th>Organizational Development Timeline: CIPIE</th>
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<td>Date</td>
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<td>6. February, 2012</td>
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In addition, we developed a database which includes the number of students identified with disabilities and their specific needs, the services they are receiving, their location in the municipio, the school they are attending or should be attending, the name of the teacher responsible for each child, and their current intervention progress. This data allows us to monitor continually the impact of the changes we are making and modify what we are doing as needed.

### Conclusion

As is the case with any journey, there have been many turns along the way with
wonderful memories. This journey will be lifelong for many. Every year, we continue the planning and learning process by revisiting our vision, mission, goals, and stakeholders’ views of the situation, setting a new plan of action and accountable members, providing professional development for teachers, assessing and providing intervention for children, sharing our program process with the national government officials, and we are often interviewed by several local and national television stations. This successful project has been possible through the long term efforts and partnership of Hondurans and North Americans.

Seven years ago, we began the process with one North American speech therapist and one Honduran doctor contemplating the possibility of providing education for children with special needs. Where are we now? As of October 2013, we had three teachers providing educational support services for 92 children with identified disabilities. These teachers are providing educational support services in the area of cognition, speech, language, hearing, general academic assistance, Honduran Sign Language instruction, and early intervention. The CIPIE program is supported through a local Honduran board of directors, a group of physicians, a special education supervisor consultant, North American advisory committee, resources from SCW, Santa Cruz de Yojoa government and the
Department of Education, Teleton, and several local businesses. In addition, teachers from the Santa Cruz municipio have initiated their own professional learning community to consider ways to integrate students into the classroom. They seek out special training provided by Honduran and North American specialists. The building for the center was completed and dedicated during our July trip in 2013. This has become a Honduran project for Honduran children governed by Honduran leaders.

Author Note

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Schools for the Children of the World is committed to providing educational opportunities through quality school facilities in underdeveloped countries.

Schools for the Children of the World (SCW) is a 501(c)3 non-profit organization whose mission is to work in partnership with the private, public, and non-profit sectors at local, national, and international levels to create quality learning environments in developing countries.

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- Unparalleled networking. See old colleagues and meet new ones from all over the world. Share concerns and solutions with fellow professionals who know where you’re coming from.

- Outstanding special events. From the opening keynote by Andrew Solomon, author of Far From the Tree, to the uplifting Yes I Can Awards, you’ll experience the emotions and values that drew you to this profession in the first place.

Be inspired.
CEC 2014, April 9-12, Philadelphia, PA

DON’T DELAY!
Visit www.cec.sped.org/convention to get the best rate and save $.

April 9–12, 2014
Pennsylvania Convention Center
Toll-free: 1-888-232-7733
Phone: 1-703-620-3660

Council for Exceptional Children
www.cec.sped.org
Join Online Today: www.cec.sped.org

Professional Membership Application

1. Contact Information

**PLEASE PRINT + PLEASE USE PREFERRED MAILING ADDRESS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>PREFIX</th>
<th>FIRST NAME</th>
<th>MIDDLE INITIAL</th>
<th>LAST NAME</th>
<th>SUFFIX</th>
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<tbody>
<tr>
<td>ADDRESS</td>
<td>SCHOOL/UNIVERSITY/ORGANIZATION NAME (ONLY IF USING SCHOOL/UNIVERSITY/ORGANIZATION ADDRESS)</td>
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<tr>
<td>CITY</td>
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<td>PHONE</td>
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<td>HOME NUMBER</td>
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E-MAIL ADDRESS

☐ Do not share my contact information with other education organizations and companies.

2. CEC Dues

Please select the appropriate Combined CEC International and State/Province dues rate for the contact information provided above.

- States/Provinces not listed below: $117
- UT: $120
- MD: $121
- AZ: $122
- ID: $123
- KS: $124
- NY: $126
- CO, GA, OR, TX: $127
- MN, MO: $128
- NE, PA, VT: $129
- CA: $133
- AK: $138
- All non-U.S./Canada locations: $176

Information on Student membership can be found at: www.cec.sped.org/studentmembership. Please do not use this application to enroll as a Student member.

3. Choose Your Special Interest Division(s)

Please select all divisions you wish to join.

- Council of Administrators of Special Education (CASE)
- Council for Children with Behavioral Disorders (CCBD)
- Division for Research (CEDR)
- CEC Pioneers Division (CECP)
- Council for Educational Diagnostic Services (CEDS)
- Division on Autism and Developmental Disabilities (DADD)
- Division on Communicative Disorders and Deafness (DCDD)
- Division on Career Development and Transition (DCDT)
- Division for Culturally and Linguistically Diverse Exceptional Learners (DCDEL)
- Division for Early Childhood (DEC)
- Division of International Special Education and Services (DiSES)
- Division for Learning Disabilities (DLD)
- Division for Physical, Health and Multiple Disabilities (DPMHD)
- Division on Visual Impairments (DVI)
- The Association for the Gifted (TAG)
- Technology and Media Division (TAMD)
- Teacher Education Division (TED)

SUB TOTAL

4. Calculate My Dues Rate

**CEC Dues (from Section 2)**

<table>
<thead>
<tr>
<th>CEC Dues*</th>
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<th>CEC Division Total Dues (from Section 3)</th>
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<th>My Total Dues</th>
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<td>U.S.</td>
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Promotion Code: WEBAPP

Dues Subject to Change After December 31, 2013

5. Payment Options

☐ Check (in U.S. funds) (All returned checks are subject to a $35 U.S. return fee)

☐ Purchase Order (U.S. and Canada only - must submit with application)

☐ Credit Card (credit card transactions in U.S. funds)

☐ VISA ☐ MasterCard ☐ Discover ☐ American Express

Card #

Expiration (MM/YY) ☐ CVV/CID

Signature:

☐ Bill entire amount ☐ Bill via Dues Installment Plan**

Send this form and payment to:
Council for Exceptional Children, P.O. Box 79206, Baltimore, MD 21279-0206

**Dues Installment Plan. One third of your total dues will be charged to your credit card when you join/renew. Your second installment will be charged automatically to your credit card on the first day of the next month. The final installment will be charged automatically to your credit card on the first day of the second month following the month you joined/renewed.

*CEC Dues include a $20.00 as Imbalance contribution to the Visa Card Program.
Dues rates are valid through December 31, 2015 and are subject to change.
Annual membership dues in CEC include $24 for subscription to Exceptional Children and $18 for TEACHING Exceptional Children; CCBD includes $8 for Behavioral Disorders; and DADD includes $8 for Education and Training in Autism and Developmental Disabilities. This information is given in order to meet postal regulations. Please do not use as a basis for payment.
CEC Membership Benefits

Information—CEC is your #1 source for comprehensive, cutting edge information on teaching and learning. As a member of CEC, you will receive CEC Today, six issues annually. You'll stay up-to-date on the news in the special education field through your CEC Web site at www.cec.sped.org.

Participation—CEC membership provides you with direct access to state/provincial and local resources, contacts, and opportunities to affect education policies and practices in your community.

Impact—You'll be part of CEC's advocacy efforts to improve the educational success of children with exceptionalities, foster legislation that addresses their needs, and create better teaching conditions.

Professional Growth and Development—CEC's continuing education programs, including the Annual Convention & Expo, provide you with groundbreaking information, state-of-the-art resources, and new ways of reaching students.

Specialization—Deepen your expertise by joining any of CEC's 17 special-interest divisions and gain access to the in-depth critical information they supply.

Career Opportunities—CEC's Career Center is the only online resource devoted solely to special education careers. It's your source for job information as a prospective employee or employer.

Networking—CEC provides you with a wealth of opportunities to make valuable contacts, share advice and resources, and advance your career.

Member Discounts—Enjoy member discounts — up to 20% — on CEC's publications and professional development events. You'll also have the added advantage of professional liability, health, and other insurance plans at group rates, and other money-saving programs.

Support—Whether it's access to the latest information, development opportunities, or other membership benefits, we're here to help. CEC is there for you!

CEC Professional Divisions

CEC Divisions are special organizations which concentrate on a particular exceptionality of children or unique aspect of special education. Divisions publish journals and newsletters and hold conferences and workshops for members. Only CEC members are eligible for membership in CEC Professional Divisions.

- Council of Administrators of Special Education (CASE)—members receive the Journal of Special Education Leadership two times each year and four newsletters.
- Council for Children with Behavioral Disorders (CCBD)—members receive four issues of Behavioral Disorders, three issues of Beyond Behavior, and six newsletters.
- Division for Research (CER-D)—members receive the Journal of Special Education and a newsletter, quarterly.
- CEC Pioneers Division (CEC-PD)—members receive three newsletters and an annual Membership Directory (upon request).
- Division for Cultural and Linguistically Diverse Exceptional Learners (DDEL)—members receive two issues of Multiple Voices for Culturally and Linguistically Diverse Exceptional Learners and two newsletters.
- Division for Early Childhood (DEC)—members receive the Journal of Early Intervention, Young Exceptional Children, and a newsletter, quarterly.
- Division of International Special Education and Services (DISES)—members receive two issues of the Journal of International Special Education (online) and three newsletters.
- Division for Learning Disabilities (DLD)—members receive Learning Disabilities Research and Practice quarterly and three newsletters.
- Division for Physical, Health, and Multiple Disabilities (DPHMD)—members receive Physical Disabilities: Education and Related Services twice yearly and two newsletters.
- Division on Visual Impairment (DVIs)—members receive the DVI newsletter quarterly.
- The Association for the Gifted (TAG)—members receive the Journal of the Education of the Gifted and a newsletter, quarterly.
- Technology and Media Division (TAM)—members receive the Journal of Special Education Technology (online) and a newsletter, quarterly.
- Teacher Education and Special Education Division (TED)—members receive Teacher Education and Special Education quarterly and three newsletters.

The Council for Exceptional Children

CEC is an international community of educators who are the voice and vision of special and gifted education. Our mission is to improve the quality of life for individuals with exceptionalities and their families worldwide through professional excellence and advocacy.
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