Assistive Technology Resources for Children and Adults with Disabilities

Closing The Gap

Solutions

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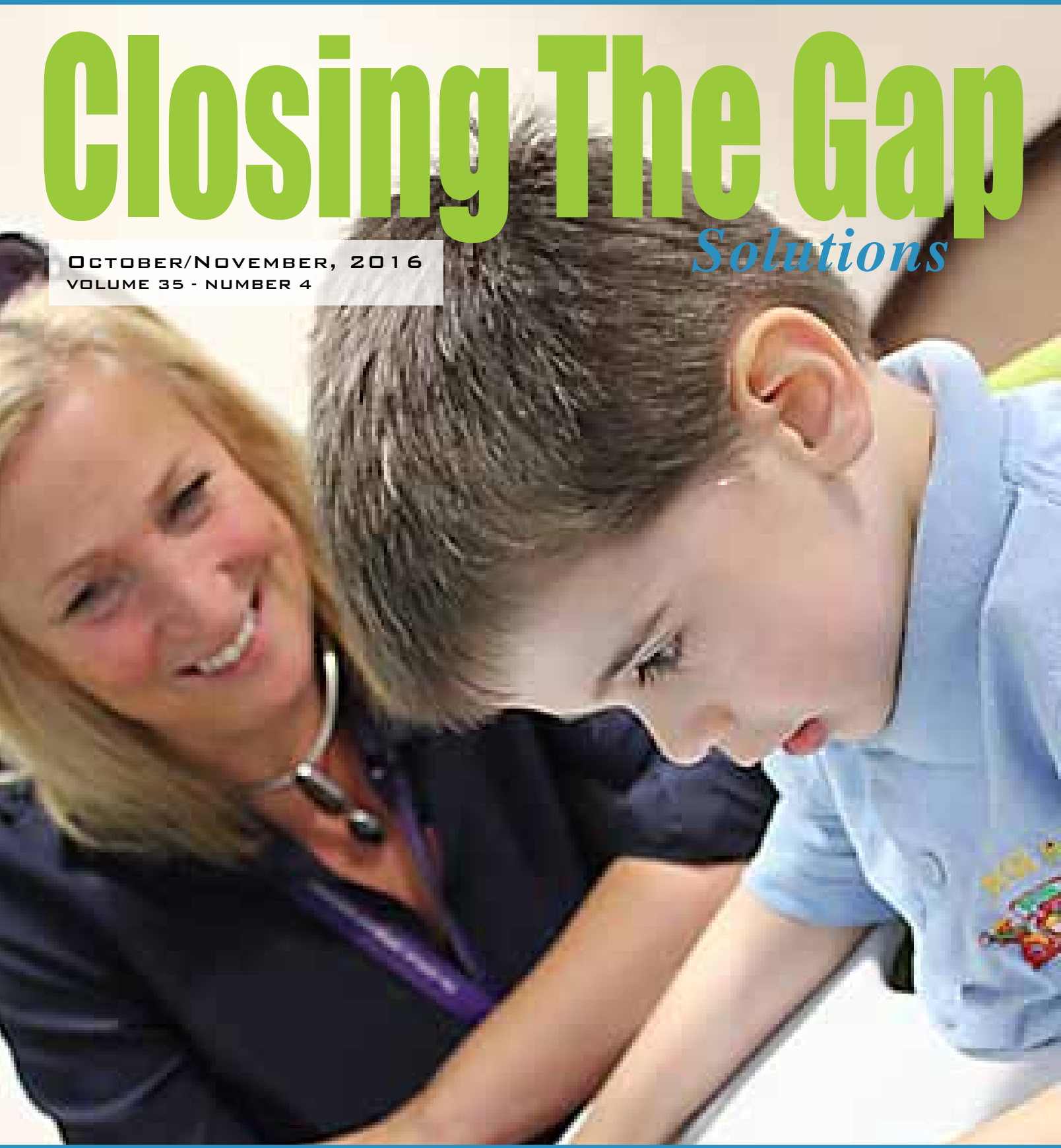

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Quality Indicators for AT in Post-Secondary Education

A person with a disability who uses or needs AT can face a number of very real challenges and barriers when entering education programs after high school. The Quality Indicators for AT in Post-Secondary Education (QIAT-PS) project has developed tools and resources in an effort to address some of these issues. QIAT-PS aims to help programs develop high quality assistive technology (AT) service delivery in post-secondary educational environments. The QIAT-PS project is sponsored by the Great Lakes ADA Center and the Southwest ADA Center, which are funded by the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR). QIAT-PS is a collaborative effort of hundreds of professionals from a wide variety of higher education and K-12 schools.

The QIAT-PS project began in 2009 with a nationwide survey of students with AT needs in post-secondary settings. The results of the survey clearly demonstrated that students bear a high level of responsibility for the integration of their use of AT in higher education settings. The results also confirmed that there was a need for programs that serve students with disabilities in post-secondary education settings to improve the quality and effectiveness of their AT supports.

Some initial survey findings included the following:

- Students were often unaware of their legal rights, of the practical factors associated with their AT use and the supports for AT use that they might need in adult environments.
- K-12 transition efforts were often inadequate or ineffective in preparing students who use AT to be successful in post-secondary educational environments.
- Disability support services staff concerned with AT often express the feeling that they operate in a vacuum on their campuses and that continuous improvement efforts were difficult or impossible because of the wide variety of student requirements for accommodations and support.

With these needs in mind, the QIAT-PS project developed quality indicators, self-evaluation tools and resources to help higher educational institutions improve AT service delivery, as well as student focused resources to increase self-advocacy skills and successful integration of AT in post-secondary education. All QIAT-PS tools and resources are

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JANET PETERS is the Project Coordinator of Educational and Assistive Technology with the Great Lakes ADA Center. Janet has 20 years of experience and knowledge in the area of technology for people with disabilities. She has worked extensively with transition teams and higher education institutions to improve service delivery of assistive technology. She works with a wide range of stakeholders to promote full and unrestricted participation in society for persons with disabilities through the promotion of technology that is accessible to all. She has a B.A. in Computer science and M.Ed in Learning Technologies.

available, at no cost, on the Web page at www.qiat-ps.org.

THE QIAT-PS INDICATORS

The QIAT-PS indicators are a set of statements that describe the characteristics of high-quality AT services provided to students in post-secondary educational environments. The indicators are divided into five general areas. Each area has five indicators or descriptors of quality.

The areas are:

- Awareness and Eligibility
- Planning and Implementation
- Evaluation of Effectiveness
- Administrative Support
- Professional Development and Training

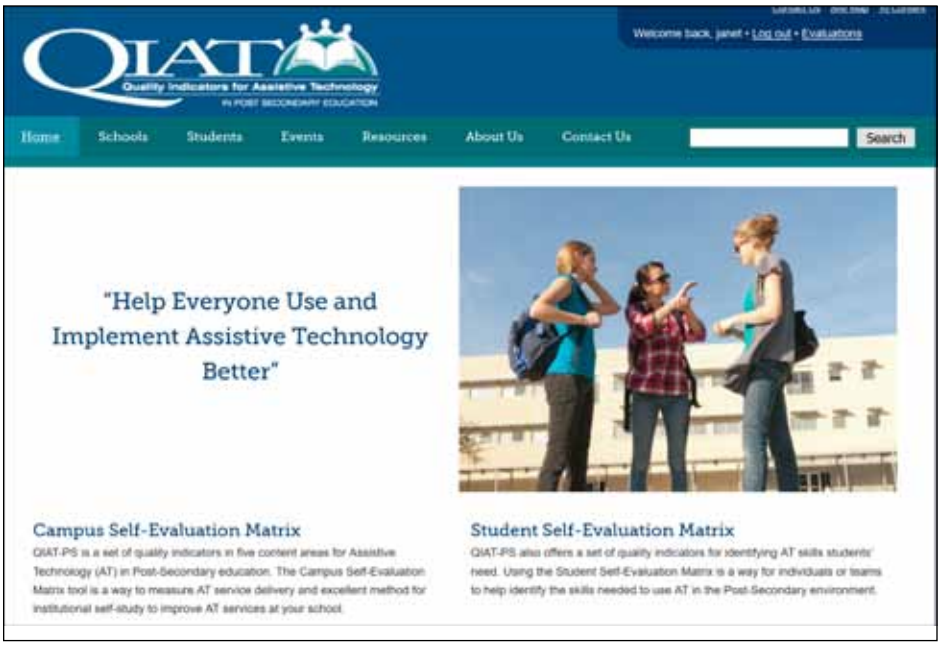

Figure 1: QIAT-PS Web page

QIAT-PS Indicator Area: Awareness and Eligibility

The Awareness and Eligibility area describes the steps that programs take to make sure that students with disabilities are aware of AT services on the campus and know how to get access to them. The indicators themselves include ensuring that promotional materials and awareness materials address AT and that there are in-house referral systems and assessments for AT services that address the student's past and potential use of AT. The indicators also address the need for campus-wide information technology to be accessible.

QIAT-PS Indicator Area: Planning and Implementation

The Planning and Implementation area describes the things that programs do to make sure that students are able to use their AT devices as accommodations in classrooms and other campus settings. The indicators address the program's systems for identifying a student's overall need for accommodations and the specific accommodations they may need; systems for monitoring student performance in the use of AT; integration of student-owned AT into the educational program; and, finally, systems to facilitate problem-solving around AT when things don't go as planned.

QIAT-PS Indicator Area: Evaluation of Effectiveness

Evaluation of effectiveness addresses activities that programs engage in to help ensure that their AT services are effective and as efficient as possible. These actions include monitoring academic environments, as well as physical access and campus attitudes about AT use. The indicators also describe the need for planning to evaluate AT services and AT device use by students; reviewing data that is collected during the evaluation; and making adjustments to the program, based on that data review.

QIAT-PS Indicator Area: Administrative Support

The administrative supports that are necessary in order to ensure continuity of program improvement efforts are described in this area. The indicators address the development of policies, procedures and other supports needed in order to maintain and improve AT programs at the post-secondary level. They address procedural guidelines and their broad dissemination. The administrative support indicators also suggest that programs need a systematic AT grievance or complaint procedure for times when students are dissatisfied with the services that they are receiving. It is administration's role to ensure that qualified support persons are available in an AT program. This requires budgets and financial resources necessary to operate the program.

QIAT-PS Indicator Area: Professional Development and Training

Professional development and training describes critical features of AT training efforts for all staff and other key players in the AT program. It includes indicators such as ensuring that professional development is available to all groups of staff who come in contact with students who use AT. Other indicators ensure that professional development is based on adult learning models and aligned with other agency initiatives.

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Table 1: Awareness and Eligibility Indicators	
Category	**Indicator**
Promotional materials and awareness	The institution has and disseminates promotional materials and conducts student orientation activities that are accessible to all students during orientation, including a list of AT available.
Written descriptions, eligibility, documentation and services	The institution has and disseminates material, regarding the use of AT, where the eligibility process is clearly stated. It includes an explanation of required documentation and disability disclosure necessary.
In-house referral for AT services	The disability service office has an in-house or referral-based process for basic assessment and selection of appropriate AT.
Intake questions about AT	The intake process of the disability services office includes information and questions about previous AT use.
Promote Accessible IT	The disabilities service office supports the accessibility of the information technology infrastructure, such as accessible website to register for classes or a work station with AT in each computer lab.

Table 2: Planning and Implementation Indicators	
Category	**Indicator**
Identify need for accommodations	The disability service office staff facilitate the exploration of an individual's disability and assists him/her in understanding the need for and various types of accommodations.
Identify specific accommodations	The planning includes the delineation of all accommodation specifics, such as disclosure, note-taking or environmental considerations.
Monitor performance and use of AT	Disability service office staff assist the student in monitoring performance and the use of assistive and required information technology and related accommodations.
Integration of student-owned AT	The disability service office supports the integration and use of student-owned AT supports into the curricular and extracurricular activities of the university when requested and in accordance with the written policy.
Integration of AT with Accessible IT	The disability service office facilitates collaboration, planning, problem solving and coordination between students, various instructional and support personnel in solving AT challenges and problems, including accessibility of institutional information technology.

Table 3: Evaluation of Effectiveness Indicators	
Category	**Indicator**
Plan for evaluation of AT provided to students	The evaluation documentation gathered by the disability service office on AT includes enough data to evaluate how AT impacts a student's ability to stay in a class, program, or graduate and is used to improve student outcomes.
Plan for evaluation of AT use and review of data	Effectiveness of assistive technology is evaluated in not only academic environments, but also in physical access, campus attitude and accessibility of institutional information technology.

AT evaluated in non-academic settings	The disability service office has a plan for evaluating the effectiveness of provided AT that is responsive to current student need and is reviewed periodically and changed as necessary.
Data reflects impact of AT use	The disability service office documents the effectiveness of assistive technologies and the evaluation data is regularly reviewed for the overall impact and effectiveness of AT compared to other accommodations.
Evaluation results are communicated	The effectiveness concerning the use of AT is communicated to all stakeholders in the institution, including individual students, relevant departments and administration.

Table 4: Administrative Support Indicators

Category	Indicator
Procedural guidelines for AT	The institution has written procedural guidelines for accessing and providing AT services that are consistent with federal, state and local laws to ensure equitable access for students with disabilities.
Guidelines broadly disseminated	The institution's written procedural guidelines about AT are broadly disseminated.
Systemic AT grievance/ complaint	The institution has a systematic process to handle grievances and complaints related to the use and support of AT or inaccessible institutional information technology.
Qualified support personnel	The institution employs personnel with the competencies needed to support quality AT services within their primary areas of responsibility at all levels of the organization.
AT in budgeting and planning process	The institution includes AT, supports and services in the technology planning and budgeting process.

Table 5: Professional Development and Training Indicators

Category	**Indicator**
AT PD opportunities for staff	The disability service office provides staff opportunities for professional development on AT, including ongoing learning opportunities that utilize local, regional and national resources and involve a variety of formats for training.
PD based on adult learning models	Professional development and training in AT follow research-based models for adult learning that include multiple formats, delivered at multiple skills levels and are driven by individual preferences and needs.
PD aligned with agency learning initiatives	AT professional development and training is aligned with other institutional initiatives and/or services.
Student training available	The disabilities services office arranges opportunities for training on AT for students with a disability when requested through the planning process.
AT PD available to a wider institutional audience	The disability services office leads the institution by example and offers assistive and accessible technology professional development to a wider institutional audience.

THE QIAT-PS CAMPUS SELF-EVALUATION MATRIX

One of the primary interactive tools developed by QIAT-PS is the Campus Self-Evaluation Matrix. This tool is intended to be used for internal program evaluation and goal-setting to improve AT services and supports. The Campus Self-Evaluation Matrix has a descriptive self-rating scale for all five of the indicator areas. An individual or team using the tool chooses the indicator variation from 1 to 5 that most closely matches their program, 1 being a novice and 5 being expert or advanced. There is a notes section to add details about the matrix score.

The tool can be downloaded as a PDF file or used through an accessible, online version. If you create a free account on the website, you may keep multiple versions of your Campus Self-Evaluation Matrix results, create comparison reports and generate action plans with goal and activity reminders.

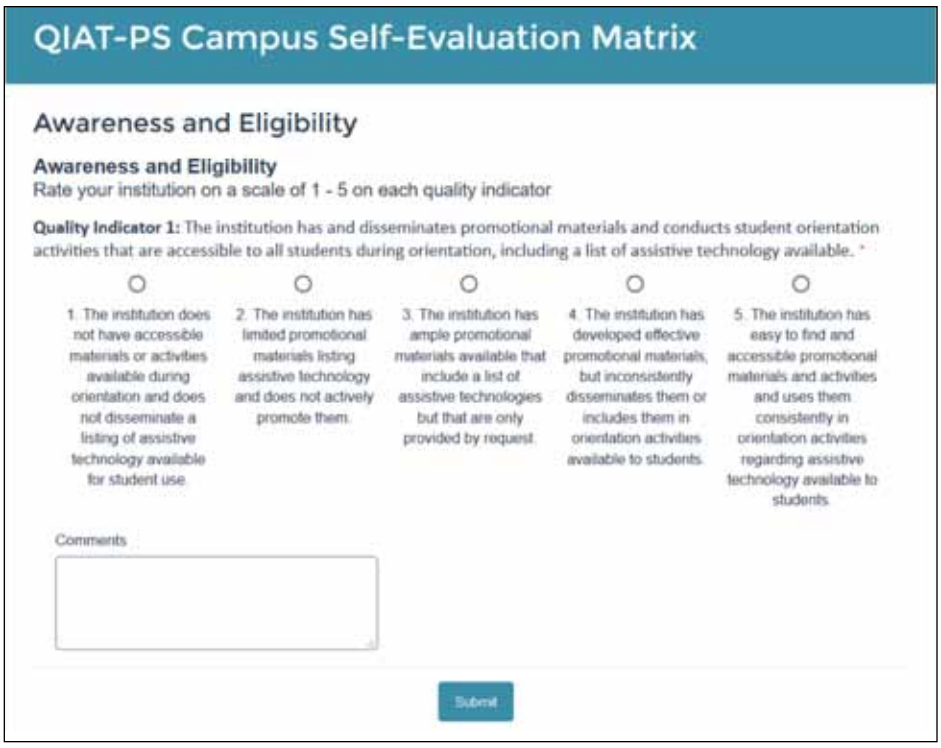

Figure 2: Accessible, online version of the QIAT-PS Campus Self-Evaluation Matrix, sample screen

QIAT-PS CAMPUS SELF-EVALUATION MATRIX PILOT STUDY

While all QIAT-PS materials are available to the general public, a group of specific schools participated in a pilot study to validate the usability and effectiveness of the Campus Self-Evaluation Matrix tool.

As part of their participation, each school agreed to share information about the demographics, culture and needs of the organization for accommodations and AT. A site coordinator was identified for each study site. Schools received direct training on the use of the Campus Self-evaluation Matrix and agreed to complete the matrix at the beginning and end of the study activities. Using the Campus Self-evaluation Matrix, each school identified areas of need and created an improvement and intervention plan that was shared with the QIAT-PS project leaders. Finally, site coordinators provided responses to a validation survey and evaluation interview at the end of their program's participation in the pilot.

PILOT STUDY RESULTS

Data analysis showed that 80% of respondents found the matrix very useful in their program improvement efforts, while the remaining 20% rated it useful. Narrative responses included comments like the following:

- Helped us identify areas of strength, which we could share with administration. Helped us identify areas of need, which we can target on next fiscal year's action plan and be deliberate in how to move forward.
- This was our first real opportunity to look at AT from the whole university perspective, not just within our individual silos.
- I felt that, overall, the reflection process was extremely valuable for our team. It allowed us to look broadly at several key areas of AT and expand our focus beyond merely providing/training for students with various AT to wider campus-wide efforts to educate and integrate AT.

When asked to describe how AT service delivery changed because of participation in the project, respondents indicated that they were able to identify and focus on specific items for improvement as a result of the QIAT-PS indicator structure. Below are two comments from the final survey that are representative of the feedback.

- There will be much more training from the system (and vendor) level. There will be efforts to increase awareness and visibility of AT across the system. There will be emphasis to promote Universal Design where and when possible.
- We saw multiple ways that we could bring more focus to AT issues, most of which were easy to implement.
- We will be using this tool annually to track and compare our AT progress year to year.

The action plans by pilot study sites included some simple and low cost improvements, such as adding AT ques-

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tions to intake forms, as well as more extensive multi-year efforts, such as collecting and cross referencing data on student retention rates and AT use or initiating a review of campus-wide information technology, such as websites, for accessibility.

PILOT STUDY SCHOOLS

Schools participating in usability study

- Arkansas State University
- Augsburg College
- City Colleges of Chicago
- Ithaca College
- Joliet Junior College
- Lamar University
- Lone Star Community College System
- Miami University of Ohio
- Minnesota State University Moorhead
- Northland Community College
- Santa Fe College
- Texas A & M University
- University of Arkansas-Fayetteville
- University of Arkansas-Little Rock
- University of Wisconsin-Eau Claire
- University of Wisconsin-Whitewater
- Waubonsee Community College

FUTURE TOOL DEVELOPMENT

QIAT-PS is currently developing a set of student quality indicators for assistive technology with an accompanying Student Self-Evaluation Matrix tool for students to rate themselves on their AT skills. The tool will be useful to both students struggling to manage AT in higher education settings and for K-12 programs to assist students in enhancing self-awareness and problem solving with AT for better transition outcomes.

These tools, taken together, will offer a coordinated framework to support ongoing student use of AT after transition from the K-12 setting to post-secondary education.

We want your involvement and input! QIAT-PS is hosting listening sessions at upcoming conferences and other events. You may add your name to our email mail list http://bit.ly/QIAT-PS to be notified of collaboration sessions or become a reviewer and participate on the core team in the tool development. ■

Improving Technology Application Through Writing Instruction:

Multi-tasking at its best

Spending on educational technology has exploded in the United States. EdWeek (Herold, 2016) reports that public school districts across the nation now provide at least one computer for every five students, and according to a 2015 Mobile Learning Report, 53% of elementary school students, 66% of middle school students and 82% of high school students use smartphones regularly. EdNET's State of the K-12 Market for 2015 reports that 11.5 billion dollars were spent on instructional materials, and of the reporting districts, purchase plans for technology include 87% tablets, 86% laptops, 83% desktops and 77% Chromebooks during the next school year (Wujcik, 2015). Districts and schools are making significant investments with the assumption teachers and students will integrate these tools into instructional, behavioral and social emotional interventions to further enhance teacher instruction, student learning opportunities and, as a result, student outcomes (Shapley, Sheehan, Maloney, & Caranikis-Walker, 2010).

TECHNOLOGY APPLICATION IN THE K-12 CLASSROOM

Yet, with all these investments, there are indications that, in some cases, technology is underused, abandoned or never used, particularly for struggling learners and those with disabilities. Besides wasted dollars, neglected technology also amounts to missed opportunities for students with disabilities for whom technology-based supports and solutions are often the key to furthering meaningful access to the general education curriculum. With the advances in technology and the greater access to tablets, laptops and other mobile devices, teachers and students are increasingly communicating a feeling of being overwhelmed. While they often want to use the technology being made available, they are left wondering what app or website is the best for their instructional needs, what technology solution will align with their instructional philosophy and, of course, what tool will provide the biggest bang for the time they are investing.

These critical issues led our team at the University of Kansas to explore how we can support educators as they attempt to combine technologies with instructional strategies. We wanted to support the innovators and early tech-

SEAN J. SMITH, Ph.D., is a professor of special education in the Department of Special Education at the University of Kansas. With a background in the research and implementation of Universally Design for Learning (UDL) and the impact of technology-based innovations for struggling learners and those with disabilities, Sean has authored books, chapters, articles, and offered national presentations. Sean is currently examining the impact of virtual reality and online learning on student development as well as ways to apply evidence-based technology innovations across the lives of those with exceptionalities, particularly in the area of literacy and technology.

AMBER ROWLAND, Ph.D. is an assistant research professor for the Advanced Learning Technologies (ALTEC) group, a division of the Center for Research on Learning at the University of Kansas. She specializes in collaborative, practical and engaging adult professional learning with an emphasis on current instructional practices and the powerful integration of technology. Currently, her research and development efforts center around supporting all students in the development of writing skills and the use of social media as a platform for teacher and student learning.

nology adopters while concentrating our primary efforts on the late majority adopters and the laggards. We also wanted to assist teachers to expand beyond simply substituting technology for a previous task by redefining their instruction where technology allows for a new task, inconceivable to the teacher prior to the use of technology. Yes, an ambitious effort.

The adoption of technology is complex. Previous experiences illustrated that while we can introduce technologies to teachers, teach them how it works and begin to apply it to their classroom, the sustainability of the tool is limited. Teachers need to see a direct application to their instructional goals and learner outcomes. If the innovation does not have a direct application, teachers will often question why they should take the time and additional resources to continue to apply. To avoid this pitfall, we sought to further facilitate technology implementation as it relates to improving writing instruction and writing outcomes, particularly for struggling leaners and their peers with disabilities.

Our focus on writing and technology was purposeful. Numerous reports (e.g., Writing to Read) share the inadequacies of writing instruction over the past two decades. The advent of No Child Left Behind and its focus on reading and mathematics appears to have relegated writing to the backseat of the bus. However, efforts to integrate the Common Core State Standards (CCSS) (see http://www.corestandards.org/) has led to an emphasis on writing, assessing student writing and the realization by teachers across content areas, that they need to dedicate time to writing instruction, particularly for struggling learners and those with disabilities. With this in mind, our work has centered on combining writing instruction with technology application, specifically writing to genres at the middle school level (grades 6, 7 and 8). We selected middle school for two primary factors. The first is that writing is a critical element of middle school instruction and increasingly being assessed during the 8th grade year. Second, writing is an expectation across content areas and not limited to the English language arts classroom and critical for success in the middle and high school years.

In the area of writing, students have difficulty with skills such as: general understanding of both writing tasks and the audience to be addressed; inclusion of details that support/develop the central idea; organization that reflects consistency in topic, sequencing and a clear introduction and conclusion; and grammar spelling, punctuation and capitalization accuracy (see http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2008468). Not surprisingly, these skills are what many of the fastest growing professions (e.g., science, technology, engineering, mathematics) demand.

Working with teachers across a number of middle schools with a range of learners, including those with disabilities, struggling learners, low socioeconomic status and a high number of English language leaners, our efforts concentrated on three specific technology applications. Realizing the array of tools available to teachers and students, we wanted to narrow the selection, allowing teachers and students to gain competency with specific technology solutions. Concentrating on previous research, we focused our attentions on apps, software and Web-based tools that aligned with either word prediction, interactive graphic organizers or talking word processors. These three families of tools have been found to be highly effective in improving writing outcomes for struggling learners and their peers with disabilities. Figure 1 offers a list of some of the technology tools that align with each of the three categories.

By identifying these three technology areas, we felt teachers and their respective students could gain an understanding of the tool. That is, there are a number of technology solutions that align to writing, but by grouping them in three distinct areas, we believed we could structure teacher and student technology understanding, their ability to align it to effective writing instruction and the application of the solution in the classroom.

INTERACTIVE GRAPHIC ORGANIZERS

We began with apps, websites and software classified as interactive graphic organizers. Graphic organizers have been around for years, helping students brainstorm, organize and visualize their ideas. However, instead of the traditional print-out graphic organizer completed with pencil or pen, we reviewed effective practices and found struggling students and their peers with disabilities needed to interact with the graphic organizer in a more tactile manner. Students also needed to replace text with visuals, manipulate the visuals to further align and organize thoughts, receive prompts to connect ideas they were able to generate and, finally, automatically convert the visual map to a traditional outline. Likewise, students might need to initially conceptualize a thought through a picture or graphic. Video and audio files were also resources that contextualized their thought process. Color played another central role where students sought to differentiate, as well as organize ideas, concepts, linkages and similar components via color. All these elements called for a technology-based or an interactive graphic organizer replacing paper with an app, website, or software application.

WORD PREDICTION

As students identified their ideas and began to structure their thoughts, they often needed assistance generating words and improving overall fluency of writing. Thus, to generate text and impact the fluency of one's writing, word predi-

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cation can be used to improve the quantity of words written, writing fluency, variety of words used, sense of sentence structure, typing skills, and student's perceived competency in writing. Likewise, word prediction can reduce spelling errors and potentially improve the speed of the writing process for many learners.

TALKING WORD PROCESSOR

Our third family of technology is talking word processing. Besides reading the text aloud, talking word processors highlight the term, allowing the student to determine if this was the correct word; re-read text (e.g., a sentence) to assist in editing and comprehending what was written; provide a talking spell check and

Figure 1:

Word Prediction		
Name	Location	Brief Overview
CO:Writer Universal	http://donjohnston.com/cowriter/	This is a for pay App as well as software. The word predication application includes built in speech recognition, libraries of vocabulary words, leveled words for various degrees and needs, and a number of other features.
Typ-O-HD	https://itunes.apple.com/us/app/typ-o-hd-writing-is-for-everybody!/id372971659?mt=8	This App offers word prediction and speech recognition options with voice output and phrase prediction as the user works through their writing.
Texthelp	https://www.texthelp.com	Texthelp comes as a software, App, and Chrome App and offers a word prediction feature to identify words, extend text, support highlighted text as part of the text-to-speech features, and more.
Co:Writer	http://donjohnston.com/cowriter/	Similar to the App, Co:Writer is a software application for Mac and Windows offering users lists of words, an extensive wordbank, and a number of features to customize the words provided as one writes.
Interactive Graphic Organizers		
Name	Location	Brief Overview
Inspiration	http://www.inspiration.com/	Available as an App or software application for Mac and Windows operating systems, this product offers a host of features for students to develop their own graphic organizer, use templates to structure their thoughts, import their own pictures or video, a library of graphics to selection from, and so much more.
Popplet	http://popplet.com/	An App but also a web-based tool that offers a visual tool for students to captured their ideas and structure through the use of images, videos, text, and a number of other features. Automatic connectors aide the students as they attempt to connect their various thoughts.
Mindomo	https://www.mindomo.com/	One of MANY web-based graphic organizers or what are often called mind maps. Offers students a way to structure their thoughts and interconnect ideas to support sequencing and order to random ideas. A caution: make sure to take the time and differentiate between graphic organizers for students and mind mapping applications for the business world. It will reduce frustration for your learners.
Kidspiration	http://www.inspiration.com/	Yes, part of the Inspiration family but targeted supports and features for the pre-school and early primary age learner. The structure and elements integrated into this App and software are aligned with the learning needs of our youngest learners.
Talking Word Processors		
WriteOutloud	http://donjohnston.com/writeoutloud/	Part of the Don Johnston suite of tools, this application is for Macs and Windows operating systems and offers a customizable tool bar, text-to-speech for nearly every function, an audio spelling and homonym check, highlighting and speech output per letter, word, and sentence, and the list goes on.

Word Q	http://www.goqsoftware.com/	Word Q is a software application that offers word prediction and text-to-speech functionality for a talking word processor. It floats on top of other applications to offer the needs supports as one writes.
Clicker 7	http://www.cricksoft.com/	This software for the Mac and Windows operating systems offers word prediction, lists of whole words and phrases, images tied to words for promoting word development, and a list of other features. One of the most complete talking word processors for a range of learning needs.

often homonym check to determine the correct spelling and also the correct term and word tense; and offer an echo to the writer to ensure they have the right word, correct sequence of words and have typed a complete thought.

COMBINING EFFECTIVE TECHNOLOGY TOOLS WITH RESEARCH-BASED STRATEGIES

As we approached our implementation efforts with middle school teachers, we realized they needed help aligning technologies and strategies with current instruction. Our efforts relied on an instructional coach who worked with the teachers to combine the technology with the instructional practice based on writing goals derived from data and upcoming learning projects. At times, the coach provided support on the technology innovations. Other times, coaching centered on writing interventions with technology taking a back seat. Overall, the effort was to address the teacher's instructional goals through the combination of technology with research-based strategies. Research-based strategies were derived from the work of Steven Graham and Karen Harris and the Self-Regulated Strategy Development Model (Graham & Harris, 2014).

Figure 2: Screen shots of the how-to video where teachers can see step-by-step instructions for pairing STOP and Inspiration Maps for argumentation.

THE PROCESS: INTEGRATING TECHNOLOGY THROUGH WRITING INSTRUCTION

How did this work? Well, let's explain it through Mike's efforts. Mike teaches English language arts to 120 plus 6th grade students. The students come from a variety of backgrounds, including a number of students with identified disabilities, as well as a significant number of struggling learners performing well below grade level. Mike, like many of his peers, was struggling to address writing challenges. While he tried a number of strategies, time and again, Mike found that his students struggled to organize their thoughts and transfer ideas from their minds onto their paper. Mike would joke that he was part of a group of teachers who believed if his students could simply share their ideas, they would be great. The act of writing confounded what they knew and prevented them from sharing this knowledge.

When he began our project, his writing interventions or strategy toolbox was a bit bare. He initially didn't realize it. That is, for the first six years of his career, reading was the focus. His mentors emphasized reading development. His building administrator focused on test data and improving student reading outcomes. Writing was not part of the conversation and thus, Mike and his colleagues had a short list of strategies (e.g., the Hamburger) that they used to address writing. Actually, when he reflected on writing instruction, he realized most of his previous effort could not be categorized as instruction but instead, writing time. During the writing time, students wrote and that was essentially it. Feedback was rare due to time and the focus of the experience.

Like many teachers, Mike saw the value of technology application. He was using technology, although much of this use was to organize and prepare for his lessons. He centered his technology use on himself and not his students or

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Student	Writing Challenge	Strategy	Technology Application	Results
Raquel	Overall Production: she would sit and stare at her screen, unsure of what to say or how to begin.	**S**uspend Judgment **T**ake a Side **O**rganize Ideas **P**lan More as You Write	Interactive Graphic Organizer with Inspiration Maps	STOP helped her get started with guiding steps and, combined with Inspiration Maps, she was able to export her map to an outline that could be copied and pasted into a word processor.
Bennett	Organization: he had great ideas, but he struggled with including each of the necessary writing components in the correct sequence.	**T**opic Sentence **R**easons **E**nding **E**xamine	Talking Word Processor with Built-in iPad Functionality	TREE helped him remember in what order to put his topic sentence, reasons and examples. Combined with text-to-speech, he was able to listen to what he had written so that he could check for all the necessary writing components.
Keon	Editing: he spent a substantial amount of time laboring over correct spelling and proper punctuation to the point where he would forget his train of thought and eventually run out of time.	**C**apitalization **O**verall Appearance **P**unctuation **S**pelling"	Word Prediction with Co:Writer Universal	COPS gave a framework for what to look for while editing his paper, and the word prediction functionality of Co:Writer Universal allowed him to type what sounded right to him. It would then offer suggestions for correct word spelling.

Table 1: Data-driven writing strategy paired with technology decisions and resulting gains.

through instructional application for his students. To realize the need to alter his practices, Mike needed to understand the "why." Why alter his instructional practices? Why would technology make such a significant difference? Why should he be focused on struggling learners and their peers with disabilities, wasn't that the job of his special education colleagues? Why technology and writing instruction?

To answer these questions, Mike needed to see data on his students' writing. Through a progress monitoring system currently being beta-tested at the University of Kansas in partnership with Don Johnston Inc, Mike was able to have his students take bi-weekly, three-minute quick writes. After a few instances, Mike was able to track student progress across several key quantitative measures, including number of words, spelling and correct word sequence. While Mike used a system currently under development, many writing tools (e.g., apps, websites, software), such as Microsoft Word, track word counts and spelling accuracy, which can be recorded over successive writing instances.

Once Mike recognized the writing challenges, based on student data, he was primed for finding solutions. He quickly realized he didn't have the tools

in his toolbox. Technology was part, but it was Mike's realization that his instructional goals in writing were not being addressed that launched him toward wanting solutions. Our work with Mike and his peers included a series of steps:

1. Identify a strategy that aligns with the writing instruction. Mike and his coach used the Self-Regulated Strategy Development (SRSD) writing strategy called STOP. Used to brainstorm the development of an argument, Mike taught the students to suspend their judgment, take a side, organize their ideas and then plan more as they wrote.

2. Align the strategy with a technology tool that supports and expands the intervention. Mike used STOP with an interactive graphic organizing app called Inspiration (see inspiration.com). With the support of an instructional coach, Mike learned how the basics of STOP align with Inspiration.

3. Investigate the various features of the technology tool and how it expands the strategy. For example, to prompt the student with visuals of the ideas and terms, Mike learned how to embed video, images and pictures into the graphic organizer app. In the end, learning the "how-tos" of Inspiration provided the support Mike needed in order to connect the writing strategy to the technology.

4. Pair the app with accessibility features of the device. For instance, speech-to-text is often helpful for the student writer. Many writers struggle to get the ideas in their head onto paper. Speech-to-text allows students to dictate their ideas and skip keyboarding all together. For the iPad, Mike learned to go to Settings>General>Keyboard and toggle "Enable Dictation" to "on".

5. When possible, leave the teacher with examples and instructional aides to promote further technology implementation. When our coaches were not available, Mike and his colleagues were directed to videos (e.g., YouTube), some created in the classroom when introducing the teacher to a concept and others that were available for free and offered basic overviews, such as how to use a pre-made template in Inspiration to customize a persuasive argument. Figure 2 offers screen shots of that instruction video available to Mike anytime, anywhere, for his review and application.

Figure 2: Screen shots of the how-to video where teachers can see step-by-step instructions for pairing STOP and Inspiration Maps for argumentation.

Table 1 offers several examples of some of the writing challenges (results derived from data) and the strategies that were taught to teachers and students, aligned to one of the three technology tools. Thus, Mike and his colleagues implemented the use of technology as part of writing instruction. If asked, many of his peers, including Mike, would have a difficult time differentiating between when the technology application stopped and the writing instruction began.

In the end, technology was adopted, writing strategies were embedded with the technology, teacher instruction was redefined due to the technology and writing practices and students improved their application of technology with measured results. Data helped get the conversations going, and research-based strategies, combined with powerful technology applications, helped shape professional learning in writing instruction and technology integration efforts and supported the increase in student motivation, confidence and success in writing.

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Giving More Children a Voice

Motivating children with complex needs to communicate

Our children are born into a world of exciting, dynamic technology. A baby is likely to see a smartphone within just a few minutes of life, as the post birth photos are captured.

Many children are effectively using tablets and smartphones within the first year of life and are able to tap and swipe away to interact with the screen. Developers have realized this and now there are thousands of apps available that use video, music and early learning content aimed at children under a year old. The mix of color, shape and sound are so irresistible to a young child that they instinctively reach out and touch it. One of the major reasons for the success of this technology is that touch is a "natural human interface" – you don't have to be taught how to do it.

An example of an AAC system providing core vocabulary.

So what about the children with complex access needs, who cannot reach out and touch the screen, but are just as desperate to interact with technology?

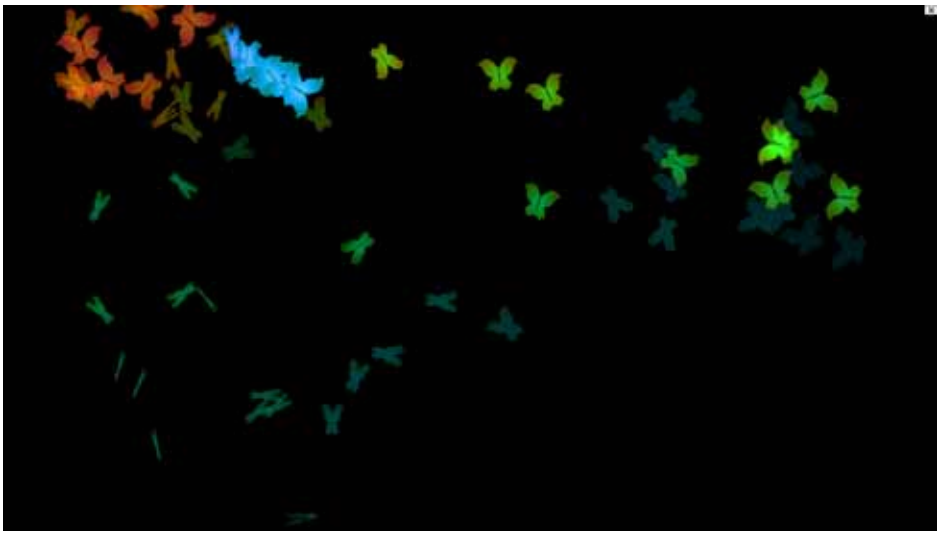
DOUGAL HAWES has been working in the field of assistive technology since 2004. He worked on the development of The Grid 2 and Grid 3 AAC software, as well as the Look to Learn eye gaze learning titles. He works as Business Development Director for Smartbox Assistive Technology and is based in Bristol in the UK. He has a wide range of experience and has worked with people with a wide range of conditions. He specializes in transitioning to AAC.

TRADITIONAL AAC SYSTEMS

Many children with complex communication and access needs have their first experience of operating technology when they begin learning to communicate.

Traditionally, we have presented these children with AAC solutions that display a grid of symbols and words. The targets are small and confusing, and the immediate reward for an accurate selection is minimal – a robotic voice reads a word aloud.

With this in mind, we set out to develop a solution that would provide children with complex physical and cognitive disabilities the opportunity to interact with the screen.



Magic Mouse in Look to Learn by Smartbox – wherever you look – butterflies appear.

A 6-month-old baby splats custard pies in Look to Learn

DEVELOPING LOOK TO LEARN

Look to Learn is eye gaze learning software from Smartbox. You simply plug in an eye gaze camera, load Look to Learn and start interacting with the animations on the screen, just by looking at it. It is designed to support all children, including those with the most complex needs, to interact with the screen and have fun.

One of our key objectives when developing the Look to Learn software was that we wanted every child that used the software to laugh and smile and be keen to come back for more.

To help us achieve this, we also needed the first experiences to be "no fail." Many of the children we work with get used to failure. Their disability means they cannot succeed in a world where technology is designed for able-bodied people.

Our "no fail" activities include Magic Mouse, where butterflies, bubbles and laser beams appear as you look around the screen. With Magic Squares you create music and bright patterns as you look at the screen.

EYE GAZE FOR EVERYONE

To make sure our resources were "no fail," we tested them with anyone and everyone! This included hundreds of children in special schools in the UK, young babies (from 5 weeks old!) and even our pets. If you have eyes that can be picked up by the camera, you will have some success. This provides a great platform for learning, as everyone loves to succeed.

At this early level, we are also trying to establish a strong relationship between the user and the screen. This is not a television. The content doesn't just perform for you. It is up to the learner to control the experience. We have found the best way to teach this relationship is to sit back and wait for the child to learn naturally. This often happens when the child looks away from the screen – everything goes quiet and the animation stops. When the child looks back again, they trigger the animation, which reinforces their ability to control the content.

ACHIEVING MORE WITH LOOK TO LEARN

The 40 activities in the software are split into five key areas of learning and include many activities where failure is simply not possible.

As the learner progresses through the activities, different skills are developed, including cause and effect, targeting

objects and choice making. Each activity is designed to develop skills that will be required for both alternative communication and eye gaze access. We find that many children struggle with the technology when they first use it, and research has taught us that huge improvements can be made through practice.

MEASURING PROGRESS

One of the challenges with teaching a completely new skill, such as eye gaze access, is how to record and measure progress. We observed that significant improvement was being made by the children using the system, but there was no way of evidencing or recording this (and, therefore, justifying its use in the classroom). To address this issue, we created a workbook that gives guidance on using eye gaze in the classroom and provides a framework for recording success.

Look to Learn was always intended to be a tool for motivating children to use their device and learn the power of eye gaze access.

MOVING ON FROM LOOK TO LEARN

Since its launch in 2013, thousands of children from all over the world have used their eyes to splat custard pies, fire rockets into space and explore interactive scenes. However, we kept hearing the same questions – "What next?" and "How do we progress to alternative communication?"

In response to this, we decided to develop similar animated resources for our flagship AAC software, Grid 3. Our aim was to provide the next steps towards alternative communication for the children we work with that have complex needs. Grid 3 supports all kinds of alternative access (touch, eye gaze, switch, joysticks, etc.), so in developing on this platform, we have opened up more content to more children.

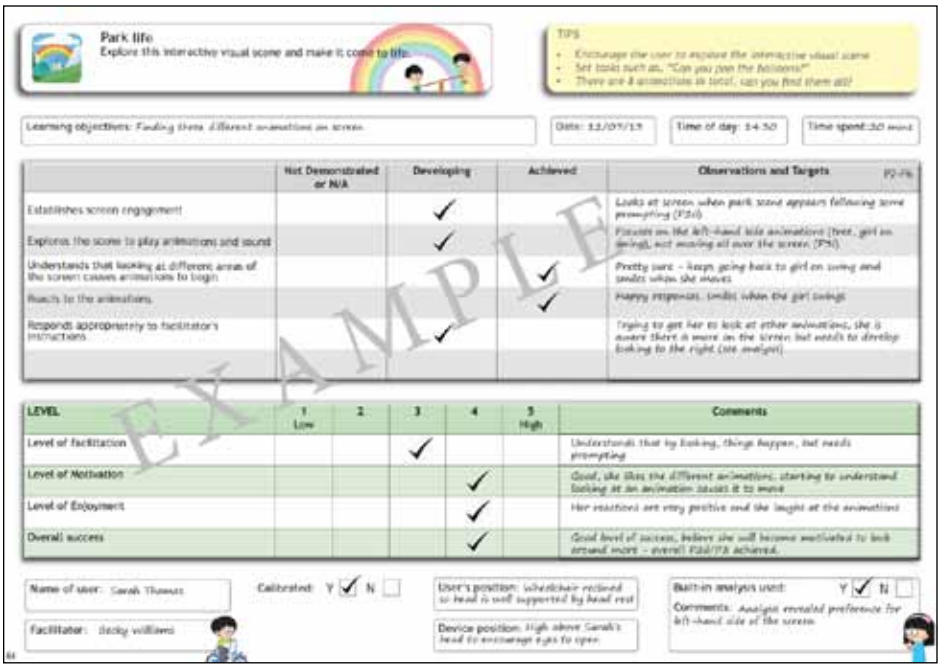


IMAGE 4: The Look to Learn workbook is designed to help record progress.

IMAGE 5: 5-year-old Marshall creates a crazy cake in Grid 3

INTERACTIVE LEARNING IN GRID 3

In Grid 3, we normally recommend starting with the Cause and Effect activities. An example of one of the most popular is Dilbert the Dog – a virtual pet that behaves a bit like a Tamagotchi (the popular toy from the 90s). You can choose to feed sausages to Dilbert, exercise him, send him to sleep and much more. Unlike Look to Learn, the learner must select targets around the screen – emulating the access requirements of a traditional AAC system.

To help children with more complex access requirements, each activity can be edited to suit individual needs. For

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instance, the number of targets can be reduced and made larger. This might be helpful to those with access difficulties or to provide focus on a particular word or concept.

Another set of activities aims to teach the important skill of choice making. This helps the child understand the impact they can have on the world around them. The choice making activities provide a "no fail" environment where the choices made will affect the animations on the screen. For instance, in the Cake Factory activity, the child can choose whether they create a normal cake with icing and cherries or a crazy cake made of clouds, fingers and worms!

Children love to play games. We have so many requests from our AAC users for opportunities to play computer games on their device, but the big issue, once again, is alternative access. In Grid 3, we wanted to offer an opportunity to try playing some games, and so we created a set of five simple challenge activities.

In image 5, you can see 5-year-old Marshall creating a crazy cake. He was the first child to try the Interactive Learning activities in Grid 3, and he now has the software at home and at school. His mom describes it as "truly amazing!"

INTERACTIVE VISUAL SCENES

Visual scenes are a great way to teach a child new vocabulary. They present an illustration or photograph to the user, along with cells that can be selected to speak objects or themes aloud. When developing Grid 3, we wanted to improve on this experience by making these visual scenes interactive. For example, in the "Park Life" scene, when you select the symbol of the bike, you will hear the word and see the boy ride the bike in the animation. The aim is to teach the word and the alternative access while keeping the child motivated.

With all of the Interactive Learning activities, you will find a link to a simple chat grid. This enables the leaner to speak simple requests from a single selection.

IMAGE 6: Learn and speak your first words with Grid 3

IMAGE 7: Marshall has fun using Grid 3 – flexible AAC software

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Examples include asking to "Do something different," "Do more" or "Finish."

The learner can also express an opinion on the activity by selecting cells that will say "amazing," "cool," "boring," etc. As always, the aim is to make the activity fun and to keep the learner engaged.

LEARNING YOUR FIRST WORDS

The special moment a child speaks their first words is something that parents remember forever. As part of our project to give more children a voice, we wanted to create a way for non-verbal children to speak and learn the same first words as children who have speech.

To achieve this, we have just launched a new resource called "First Words." It is designed to give children the chance to learn and speak their first words. On each grid you will find our Amigo character. As each word or phrase is selected, Amigo will model the meaning. So if you select "hello," he will wave, if you select "goodbye," he will wave and then walk off the screen. In each case, the role of Amigo is to teach the meaning of the word in a funny and motivating way.

The vocabulary has been chosen to reflect the first spoken words typically learned when children are developing speech. The words chosen also include vocabulary that will be very powerful when starting to use an AAC system (for example: "more" and "stop"), as well as vocabulary heard and used frequently within classroom activities and experiences.

AAC PATHWAYS

There are many approaches to alternative communication for children, so Grid 3 offers various pathways that cater to different types of learning and teaching. Some people choose simple topic-based grids that provide basic sentence building tools. Others prefer to use core vocabulary from the outset, with resources that provide the most commonly used words available from the fewest selections.

Regardless of the approach used, what is important is that the learner is motivated by their device and has an accurate and efficient method of alternative access.

LEARNING THROUGH PLAY

One of the major challenges we face is that the benefits of alternative communication are not always obvious to the children we work with. Non-verbal communication strategies can be so effective that the child doesn't really see the point in learning how to say more.

Of course, learning to say exactly what you want, when you want and to who you want is hugely beneficial to anyone that wants to live a full and independent life. However, it is difficult for a young child to relate to these ideals – children just want to play and have fun! So we use this to motivate the children we work with, using more immediate rewards, such as animation, sound and music. This has been very powerful when taking those important first steps towards the ultimate goal of independent speech.

PRODUCT INFORMATION

All software described in the article is developed by Smartbox Assistive Technology.

- Look to Learn - eye gaze learning software: $540
- Grid 3: $720 ■

PART I:

Command Central for the Brain

The Importance of "Connect-the-Dots" Lessons for Teaching Executive Functioning Skills

THE COMMAND CENTER FOR THE BRAIN

Executive functioning skills are the true command center of the brain. They consist of multiple mental skills, traveling through neural pathways, that help the brain organize and act on information to manage life tasks of all types. Executive functioning involves the ability to size up a problem; to come up with a plan to solve the problem; to reassess the plan over time as contingencies change; and to modify the plan, as needed, towards completion of the plan and resolution of the problem.

Executive functioning skills enable students to plan, organize, remember things, prioritize, pay attention and get started on tasks. In addition, they also help students use information and experiences from the past to solve current problems. Simply put, this command center is in charge of making sure things get done - from the planning stages of any task to the final deadline. These "thinking," or cognitive abilities, are essential for managing information and managing oneself.

CRUCIAL TO CLASSROOM SUCCESS

A number of executive skills are easily identifiable as being crucial to classroom success. For example, the executive skills of organization and planning help students to write down their homework, remember to do it and return it to class the next day.

Executive skills, such as sustained attention, task initiation and task persistence, are necessary for starting and completing long-term projects. Executive functions are also directly related to the development of many academic skills, such as reading and math.

Students often feel failure and frustration in the classroom. When experiencing general executive functioning difficulties, these students often struggle with task initiation, work completion, organization and motivation for any academic or classroom task. These students then perceive assignments and tasks as challenging, frustrating or simply unpleasant.

Children with attention deficit hyperactivity disorder, learning disabilities and problems in social, emotional and behavioral functioning often display impairments in their use of executive functions. They may specifically show difficulties in getting started on tasks, sustaining attention and effort levels, following multi-step directions, staying organized and managing time effectively. Oftentimes,

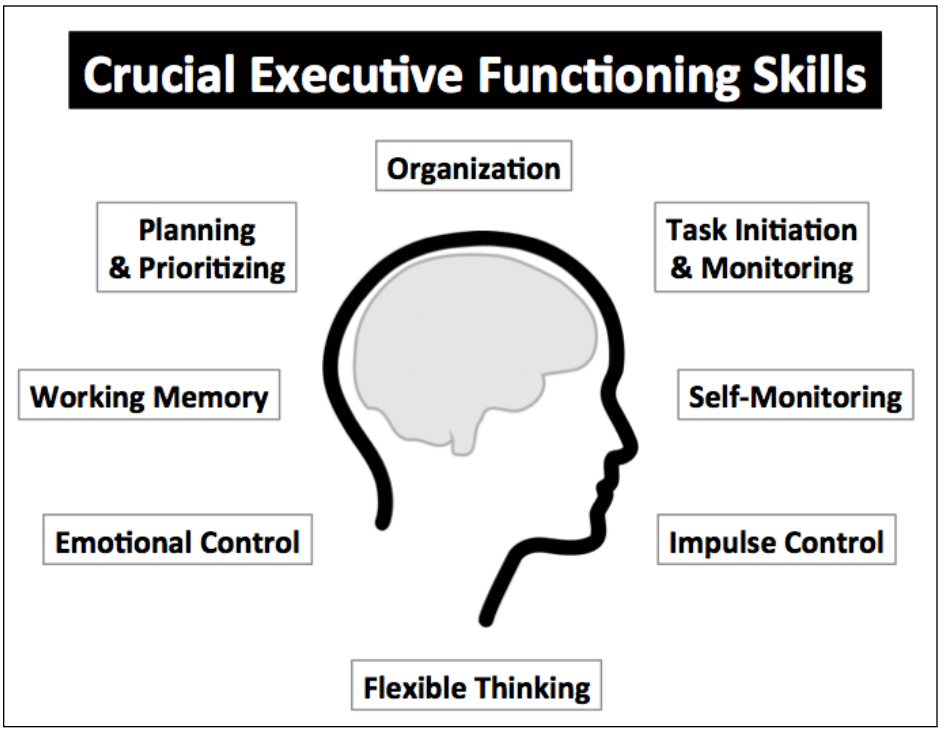
PHYL MACOMBER, President of Make A Difference, Inc. Her research-based teaching strategies have been published in several articles featured in clinical publications in education since 2009 and are being successfully used across North America and in parts of Australia, South Africa and Italy. Phyl was featured in the Common Threads Trilogy book series in 2015 as one of the top 100 empowering women from around the globe and has been a guest on several radio shows to discuss simplifying instruction for students of all abilities. www.AboutTHEPACT.com

FIO QUINN has been working in the field of education since 1985 as a teacher, trainer, national presenter and developer of learning resources. Fio has an extensive background in special education, assistive technology and differentiated instruction. She maintains her educational ties across two continents – working across North America and Europe. Fio is an independent consultant; developer of instructional technology materials; and national trainer of educational software, access tools and apps. She has co-authored several collections of ready-to-use educational activities for different software and mobile technologies.

children will display executive strengths in certain areas and dysfunctions in others.

Karen Woolsey, Director of Student Support Services in the Windsor Southeast Supervisory Union in Windsor, Vermont, points out that "students who struggle with executive functions require routine - the kind of routine that releases them from having to figure something different out each day related to teacher expectations and material organization. This structure should allow them to internalize the ability to create their own routines later in life, when planning or needing to learn something on their own, with the potential to even change or create neuropathways to improve their executive functioning."

Improvement in this set of skills would help students reach their potential – their TRUE potential - in an inclusive classroom environment, ***regardless of their ability.***



Crucial Executive Functioning Skills For Classroom Success

EIGHT KEY EXECUTIVE FUNCTIONS

Executive Function	What is it?	Student Challenges
Organization	The ability to bring order to information, such as key concepts or main ideas, or one's environment and keep track of things physically and mentally	• Constantly misplaces things or loses them • Shows difficulty grouping items together or categorizing • Cannot find a way to get organized
Planning & Prioritizing	The ability to create a roadmap to reach a goal or complete a task and being able to make decisions about what is important to focus on and what is not important	• Easily gets overwhelmed • Struggles with breaking down tasks and sequencing • Has trouble seeing the main idea
Task Initiation and Monitoring	The ability to take action, get started; then check one's performance during or shortly after; finishing a task to ensure that the goal has been reached satisfactorily	• Usually freezes and has no idea where to begin • May not act on something at all • Does not know how to check their work
Working Memory	The ability to keep key information in one's mind and use it to complete a task	• Has trouble with multi-step directions • Has a hard time remembering directions and understanding something just explained to them • Struggles taking notes

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Self-Monitoring	The ability to keep track and reflect on progress	• Often lacks self-awareness • Does not know if their strategies are working • Can be surprised by a poor grade
Flexible Thinking	The ability to adjust to the unexpected or "go with the flow	• Has difficulty changing course • Cannot "roll with the punches" to come up with new ideas when a plan fails • Gets panicky or frustrated when asked to change
Impulse Control	The ability to stop and think before acting	• Blurts things out • Does unsafe things and cannot follow rules consistently • Rushes through assignments or homework without checking it
Emotional Control	The ability to keep feelings and emotions regulated	• Has trouble accepting feedback or constructive criticism • Often overreacts • Struggles to finish a task when something upsets them and has trouble regrouping after something goes wrong

THE COMMON MISTAKES

Year after year, teams wrestle with improving executive functioning skills for struggling students. As teachers, we cannot simply provide strategies that help our learners to develop executive function skills. We need to teach our students how the brain learns and the role of executive function in this process.

Educators spend a great deal of time outlining accommodations for students having poor executive functions, often yielding limited results. For example, students of varying abilities are given planners, checklists, calendars, prompting systems and accordion binders, all of which can be potentially useful tools. Other commonly listed accommodations to support students with executive functioning issues include using simplified directions, short verbal phrases, brain breaks or relaxation exercises. These solutions, however, are often ineffective if our students do not have basic foundational knowledge of the WHAT, WHY and HOW of executive functioning.

EMPOWERING STUDENTS WITH EXECTUIVE FUNCTIONING KNOWLEDGE

In order for students to be successful in the classroom and effectively use the tools we make available to them, they need to have fundamental word knowledge and word meaning of key executive functioning concepts. Students of any ability cannot express and demonstrate what they do not understand. If students do not have a full understanding of the concepts of organization, planning and time management, for example, it will be very difficult for them to improve in these areas – with or without the accommodations and tools that we provide.

It is impossible to overstate the importance of explicitly teaching these executive functioning skills to learners of any ability.

We have trained thousands of teachers to expand their depth of understanding of how executive function develops and the impact it has on learning using consistent lessons, tools and strategies that keep students on task and increase such crucial skills. In addition, we have had significant success using the research-based methodology of T.H.E. P.A.C.T. framework to directly teach students of all abilities fundamental knowledge of executive functioning skills and increase their understanding of the tools we put into play to assist them in the classroom.

T.H.E. P.A.C.T. is a 4-step roadmap for teaching anything: Learn About, Read About, Write About and Talk About. As educators, we need to do these things in this order, based on the longstanding research of how the brain works: which is to teach an understanding of content before you test what was learned. This helps students succeed.

Regardless of subject or topic of study (in this article, the topic example is teaching executive functioning and support tools), teachers walk students through learning about it, reading about it, writing about it and talking about it. They do this in a way that the students feel anchored with the "how-to-do-it" part - by using consistent teaching activities and predictable instructional tools - so the students focus on "WHAT" they

are learning instead of "HOW" they are learning it.

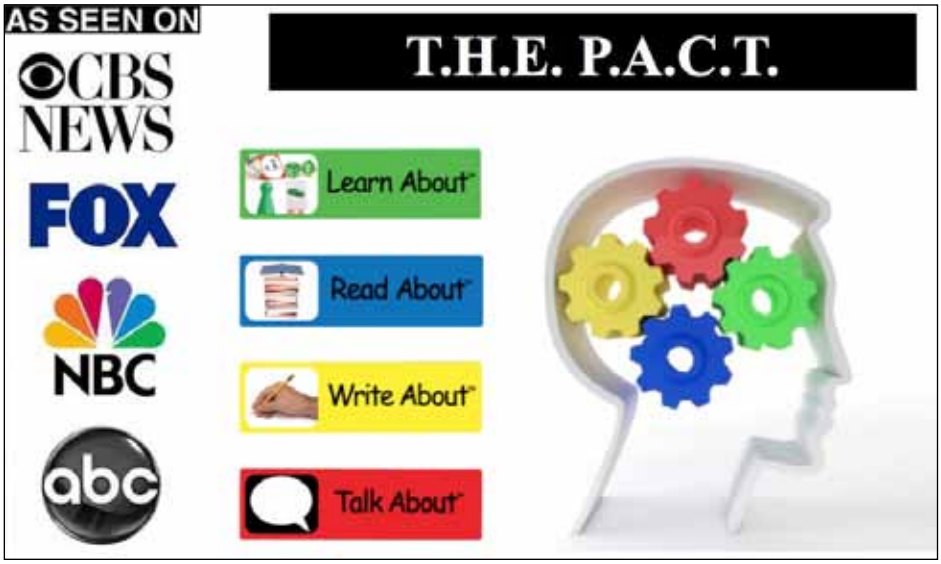
Students with executive functioning issues respond very well to increased structure, routine and predictability in their lives. This has been proven time and time again. This directly aligns with the foundational principles of T.H.E. P.A.C.T., which are consistency and predictability. This is one of the primary reasons why the methodology of T.H.E. P.A.C.T. is so effective as a teaching framework for learners of all abilities.

Consistency and predictability provide the school day with a framework that orders a learner's world. Children thrive on sameness and repetition. "Knowing what to expect from activities helps children become more confident," says Dr. Peter Gorski, Assistant Professor of Pediatrics at Harvard Medical School in Cambridge, Massachusetts. In addition, when students know what to expect, it decreases cognitive load, increases their participation and improves their independence.

As Director of Student Support Services, Karen Woolsey goes on to say, "If a teacher leaves out a critical step in the learning process, students, who do not figure things out naturally, will fall behind. If the presentation of content is delivered in a predictable, routine way – that is also interesting and relevant – the students who are struggling to 'stay with it' in the classroom have less to overcome in the learning process. Here is where T.H.E. P.A.C.T. framework comes in because it anchors the students in the learning process and does not skip crucial pedagogical elements. In fact, T.H.E. P.A.C.T. simultaneously teaches executive functioning skills, while providing universal access to curriculum, so that our students in special education can fully participate in the classroom."

T.H.E. P.A.C.T. assures solid comprehension of vocabulary, key concepts, main ideas and details. Using T.H.E. P.A.C.T. to increase a student's understanding of executive functions, their importance, and the "what" and "why" behind the tools we select for them to use is a proven recipe for success. Because we are building a solid understanding of knowledge, students have decreased anxiety in the classroom when asked to complete their assignments. Students simply know what to do, how to do it and then how to share it or apply it.

Teaching Students Executive Functioning Using T.H.E. P.A.C.T.



The Research-Based Teaching Methodology of T.H.E. P.A.C.T.

Neil Haley, CEO and Producer of the Total Education Network, states, "T.H.E. P.A.C.T. gives teachers the answers they're looking for when needing to differentiate instruction in their classroom to literally teach anything – including executive functioning skills. It hones in on the standards, strategies and measurable objectives – regardless of the lesson. You take it and serve all students. T.H.E. P.A.C.T. gets teachers and special ed staff on the same page to serve all kids. Over the years, I've seen so many students struggling with

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executive functions and T.H.E. P.A.C.T. is the proven method to get all students to succeed."

"CONNECT-THE-DOTS" LESSONS FOR STUDENTS

In Part Two of this article series, we will walk you through a chain of vocabulary building lessons – using both print-based and interactive tools – for students to learn about the concepts of organization, planning, prioritizing, initiating and monitoring tasks and time management related to daily classroom assignments and long-term projects. Language lessons will also include learning about important executive functioning tools. Creative and engaging vocabulary lessons will include language-based games, reference tools and hands-on projects.

In addition, we will connect these vocabulary lessons to "reading-to-learn" lessons for students to expand their knowledge base and read about these executive functioning skills and tools. Real-life student examples of lessons will be outlined using talking concept maps, interactive sequence lists and timelines, along with accessible books and study guides. You will learn the importance of creating a library of executive functioning resources to complement explicit in-person instruction as it relates to independent learning opportunities for review and practice.

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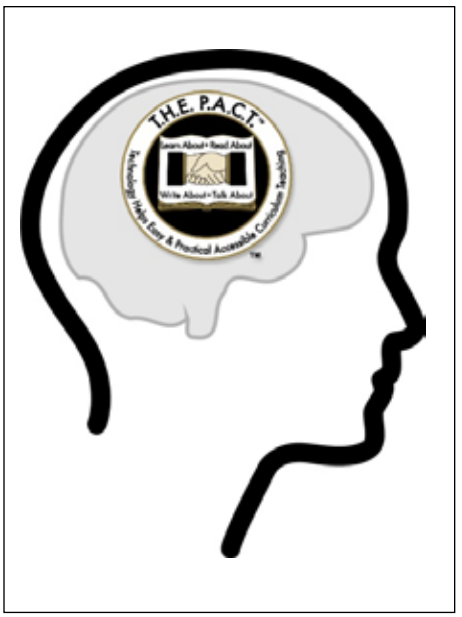


Consistency and Predictability Improve Student Performance

The Hard Thing About Soft Skills

Practical Tips to Make Identifying, Assessing and Teaching These Essential Skills Much Easier

For a long time, there has been an emphasis on academics or technical skills when considering career preparation. But if you look at the data, these really aren't the skills we should be focusing on. These skills are often referred to as "hard" skills, and are not a clear indicator of individual success and not what today's employers are looking for in the employees they hire. In other words, if we're really focusing on effective workplace readiness, we need to modify our strategy. There's an old saying that insanity is doing the same thing over and over again while expecting different results, and when it comes to workplace readiness, a lot of employers are starting to question if there isn't a better way to predict which employees will be successful.

Fortunately for employers, these predictors do actually exist. The skills that translate into success in the workplace are not the hard skills that have been traditionally emphasized, rather they are social/emotional skills that research shows will lead to success in just about any work environment. According to research done at the University of Maryland and the Robert H. Smith School of Business, what employers are looking for in today's workplace is not people who have the technical skills to do a specific job. Instead they are looking for employees who have the emotional intelligence skills that are required in order to work as part of a team. According to the report, more than one in three hiring managers reported placing an increased emphasis on emotional intelligence in their hiring and promoting decisions, and 71% said it was actually more important than IQ (or hard skills). 59% even said they wouldn't hire someone who had a high IQ but lacked emotional intelligence or "soft" skills.

This study is not the only one of its kind, however, as this trend is noticeable in just about every industry. Another study by Association of American Colleges & Universities showed the top learning outcomes employers rated as important shows similar results.

ACCORDING TO THE SURVEY, THE TOP TEN LEARNING OUTCOMES EMPLOYERS LOOK FOR ARE:

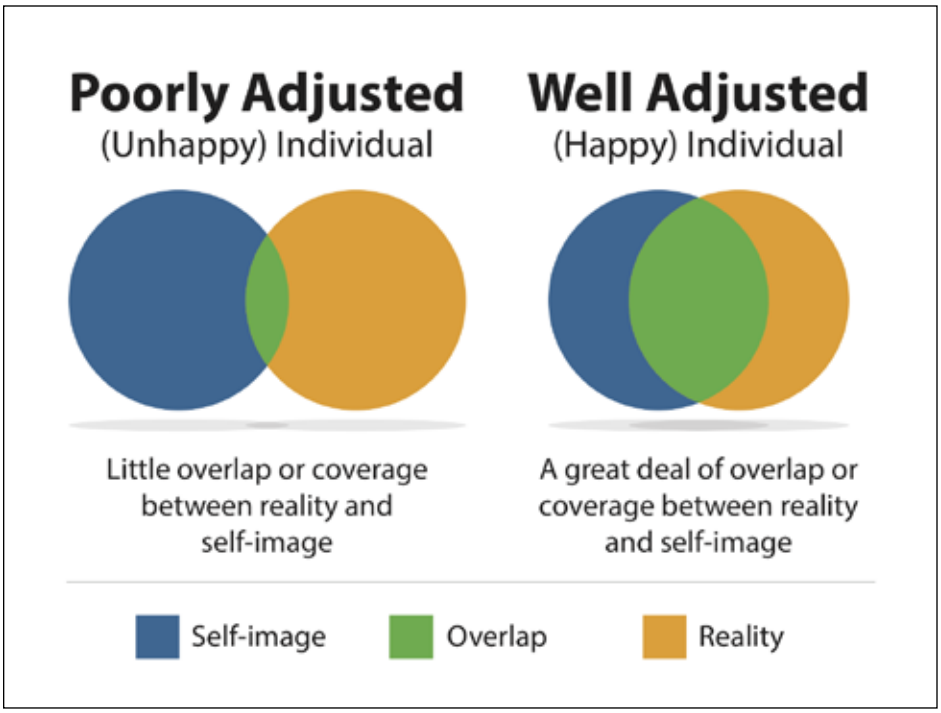
1. Oral communication (85%)
2. Working effectively with others in teams (83%)
3. Written communication (82%)
4. Ethical judgment and decision making (81%)
5. Applying knowledge skills to the real world (80%)
6. Analyzing/solving complex problems (70%)
7. Locating, organizing and evaluating information (68%)
8. Being innovative and creative (65%)
9. Working with numbers and statistics (60%)
10. Analyzing/solving problems with people from different backgrounds (56%)

MIKE SCHMITZ is the president of The Conover Company, a Wisconsin-based software company that has been dedicated to helping people develop success skills using evidence-based assessment tools for over 30 years. He loves helping people reach their full potential and is passionate about teaching people to use their technology tools to work smarter, not harder. He can be contacted at mschmitz@conovercompany.com

Only one of these, working with numbers and statistics at number 9, is a traditional "hard" skill. The rest of these skills are part of a new set of skills that more accurately predicts workplace success and are classified as "soft" skills.

There's been a lot of buzz around soft skills lately, but many people still don't have a firm grasp of what they are (or how to teach them). The dictionary definition of soft skills is, "personal attributes that enable someone to interact effectively and harmoniously with other people." These skills have very little to do with what is traditionally taught in our educational system because they are difficult to quantify, but it can be done. What's interesting, though, is how similar this definition is to another term that is often misused and misunderstood: emotional intelligence. Emotional intelligence has been tossed around in the corporate world for years since Daniel Goleman published his book on the subject, but very few people know how to identify or assess these essential success skills. The dictionary definition of emotional intelligence is "the capacity to be aware of, control, and express one's emotions, and to handle interpersonal relationships judiciously and empathetically."

The similarities of these definitions are not coincidental. Notice that there's no reading, writing or arithmetic involved with either one. Emotional intelligence and soft skills are linked in this way. What research has shown repeatedly is that what will make you successful in today's workplace is the ability to work with other people. This is nothing new, as research by Charles Mann as far back as 1918 showed that these soft skills actually account for up to 85% of an individual's personal and professional success. While research has existed for almost 100 years on the effectiveness of soft skills and the direct correlation to both personal and professional success, it has been largely unrecognized and under-emphasized by the general public.



Recent research shows this is changing, however. Here are just a couple examples of the impact that these skills have had in professional settings in recent years:

- At L'oreal, sales agents selected on emotional competence outsold salespeople selected using old procedures on an annual sales basis of $91,370. (There was also 63% less turnover with those salespeople because they were much happier.)
- In a large beverage firm, 50% of division presidents left after two years. When they used emotional competencies to hire, only 6% left in two years. (They also outperformed their targets by 15-20%.)
- The Air Force found that by using emotional intelligence to select recruiters, they increased their ability to predict successful recruiters by nearly three times. (This resulted in immediate savings of $3 million annually.)
- At a national furniture retailer, sales people hired based on emotional competence had half the dropout rate during their first year of employees hired using traditional methods.

If we dig a little deeper, we see a very important connection between all of these examples - in every single situation, the presence of social/emotional skills led to less staff turnover. Companies that have a high turnover generally have emphasized technical or hard skills, but this almost always leads to what is known as the Turnover Process.

In this predictable pattern, companies will hire for reasons 1 or 2 (superficial, knowledge & experience). Maybe they are really impressed by the individual in the interview or their resume looks impressive. But most companies will lose people because of reason 3 - they lack the social/emotional skills to adapt in a workplace environment.

In other words, they're not workplace ready. Hiring people who are not workplace ready (who don't have the soft skills they need to be successful) will predictably lead to failure.

This is a very costly mistake for an organization to make. When it doesn't work out and the individual leaves, it ends up being very costly for the organization. They invested time and money to hire people and get them trained to do the job they were hired for, and now

they have to start all over. Employers are starting to recognize this pattern and are looking for a better way to screen applicants so they can identify which ones will work out and which ones won't.

As I've said before, that criteria is soft skills. But just knowing what to look for won't guarantee success. Taking a step back, what would be even better is to start assessing and developing these skills before the individuals enter the workforce. That way, they will have the skills necessary to be successful when they get there and employers won't have to worry about trying to fix things later.

In order to do this, you need to have an effective approach in order to improve workplace outcomes.

THREE KEYS TO IMPROVING OUTCOMES

Once we've come to grips with what is really going on, we can start taking action to fix the broken system. Regarding workplace readiness, that means placing more people in jobs who have the skills that they need to be successful and flourish in that environment.

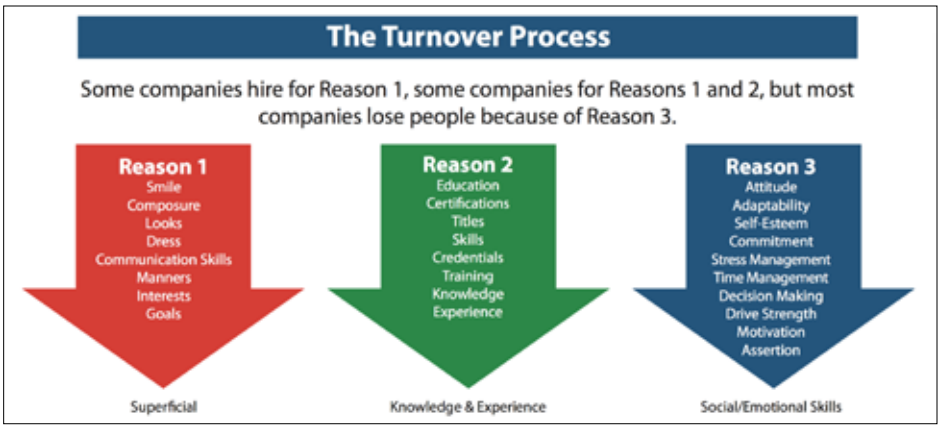
Here are three keys to improving employment outcomes for the individuals you work with.

#1: CLEARLY UNDERSTAND YOUR OWN ABILITIES

The military strategist Sun Tzu once said, "If you know the enemy and know yourself, you need not fear the results of a hundred battles." But many times the enemy IS ourselves because we aren't in a position to accurately see what needs to be done.

A poorly adjusted individual has not developed the workplace readiness skills to see his or her situation accurately. These are the people who don't show up to work for two weeks and then complain they were treated unfairly when they are let go.

The solution is to develop the skills you need to see the situation accurately (figure 2). These people have developed the ability to see things as they are and, as a result, they tend to be successful in just about any environment.



#2: IDENTIFY THE AREAS YOU NEED TO IMPROVE

Ignorance is not bliss. In the real world, what you don't know can hurt you. the Chinese philosopher Confucius once said that "true wisdom is knowing what you don't know." In order to improve, you need to know what you need to improve (know what you don't know).

The most effective way to do this is to use an evidence-based assessment tool. This will provide a baseline that you can use to identify the areas of greatest need and will also give you a way to measure progress. By comparing pre and post assessment results, you have a scorecard to measure the effectiveness of the interventions you use to develop workplace readiness skills.

#3: HAVE A PLAN TO GAIN THE KNOWLEDGE, SKILLS OR TOOLS NECESSARY

Having a plan is extremely important. Benjamin Franklin once said, "Those who fail to plan, plan to fail." Once you've identified the areas you need to improve, the next step is to develop a plan or a strategy for acquiring the skills you need in the areas of greatest need.

But not all plans are created equal, and some approaches are more effective than others. One of the most powerful approaches in you can use is video modeling.

THE POWER OF VIDEO MODELING

Before we can understand video modeling, we have to understand a concept called "observational learning," developed by Albert Bandura. In a research study done in 1977, he found that children acquire many skills simply by observing other people perform the skills, that observers will imitate behaviors with or without the use of reinforcement and that they can learn to perform the behavior in new settings. The skills were transferable and generalizable, a premise that is carried over to the video modeling approach.

Video modeling is "The process of repeatedly observing appropriate language and behavior in real-life situations on a screen and then using this new behavior in real life situations."

WHY IT WORKS

It's been said that if a picture is worth a thousand words, then a video is worth a million. Video modeling is so effective because it leverages a principle known as mental rehearsal and visualization.

For example, in 1967, Australian Psychologist Alan Richardson did an experiment with three groups of basketball players:

- The first group would practice 20 minutes every day.
- The second would only apply the principle of mental rehearsal and visualize themselves making free throws, but no real practice was allowed.
- The third one would not practice or visualize.

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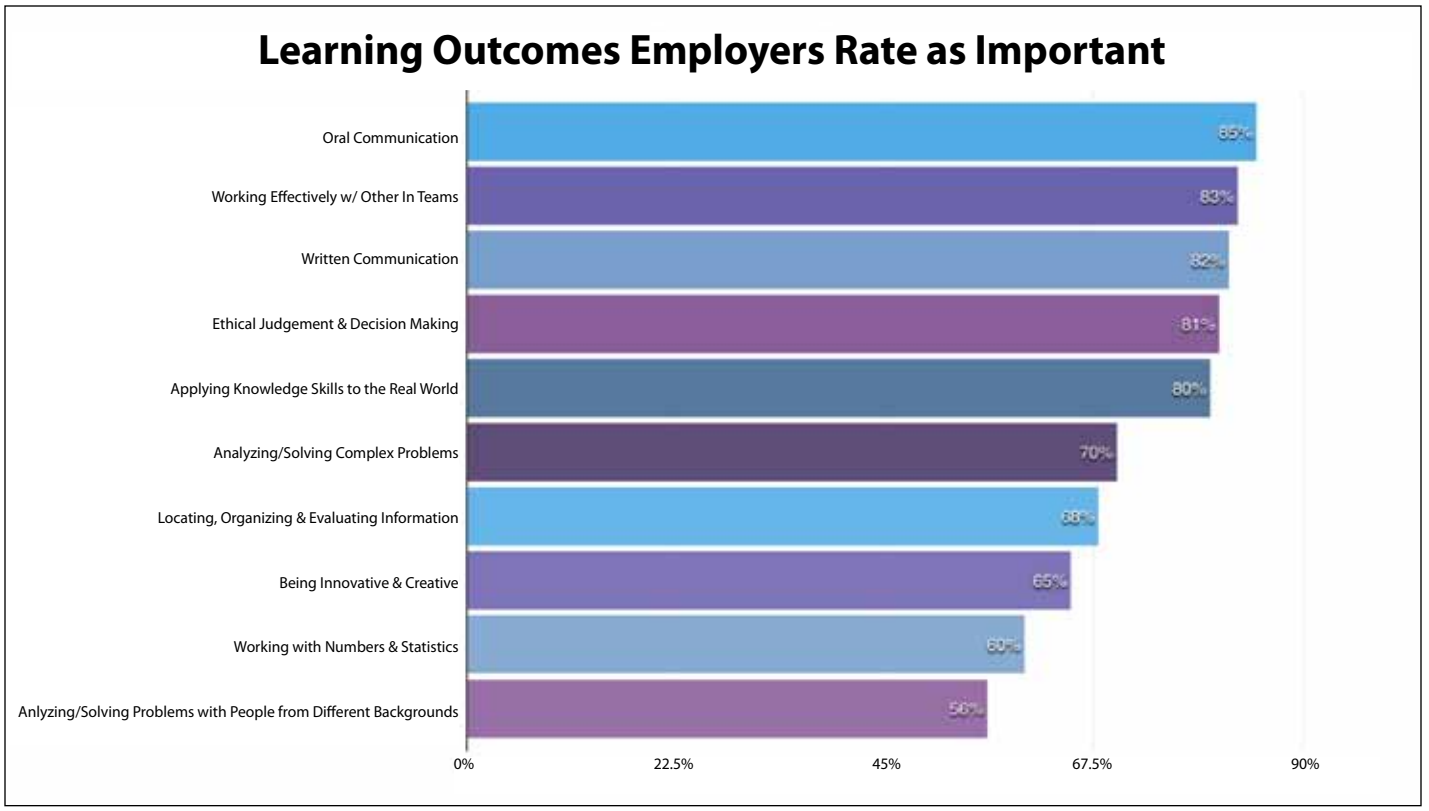

After 30 days, they found that the first group had improved by 24%. But what was even more astounding was that the second group improved by 23%! They improved almost as much as the group that had practiced, even though they never physically picked up a basketball.

RESOURCES

One thing is for certain - soft skills will only become more important as we shift even more towards a digital economy. Even if you work remotely, you still need to know how to work effectively as part of a team to accomplish a common goal. In fact, for a remote team, this is even more important as the communication methods that you use every day (email, text messages, etc.) force you to rely on nonverbal methods of communication.

If you want to learn more about soft skills, here are a couple of resources (including links to studies cited in this article):

- University of Maryland infographic (Emotional IQ & You) - http://www.nationalsoftskills.org/emotional-iq-and-you/
- Association of American Colleges and Universities survey - https://www.aacu.org/sites/default/files/files/LEAP/2015employerstudentsurvey.pdf
- Charles Mann Study of Engineering research - http://www.nationalsoftskills.org/downloads/Mann-1918-Study_of_Engineering_Educ.pdf
- National Soft Skills Association - http://www.nationalsoftskills.org
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34th Annual Closing The Gap Conference

Assistive Technology in Special Education, Rehabilitation and Everyday Living

OCTOBER 19-21, 2016 | MINNEAPOLIS, MINNESOTA

Preconference Workshops: October 17-18, 2016 | Preview of Exhibits: October 18, 2016

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- ✔ **17 PRECONFERENCE WORKSHOPS** Day-long workshops, conducted by nationally recognized leaders in the field, providing in-depth professional skills necessary to successfully implement assistive technology in the lives of persons with disabilities.
- ✔ **THREE DAYS OF PRESENTATIONS AND HANDS-ON LAB OPPORTUNITIES** Sessions describing and/or demonstrating successful

strategies and practical applications of assistive technology for persons of all ages with disabilities.

- ✔ **COMMERCIAL EXHIBITS** Extensive exhibition area displaying and demonstrating state-of-the-art assistive technology products and implementation strategies.
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LEARN MORE AND REGISTER ONLINE: WWW.CLOSINGTHEGAP.COM

ADMINISTRATORS PARTICIPATE FREE

When any school district or hospital staff member registers for a preconference workshop or the three-day conference, one administrator (Special Education Director, Principal or Hospital Administrator) from that organization can attend the conference, Wednesday through Friday, and the exhibition preview, Tuesday evening, for FREE! One free registration per district/hospital.

Conference - Wednesday, Thursday, Friday, October 19-21, 2016 Includes Preview of Exhibits – Tuesday Evening, October 18				
Registration Received	**On or Before June 30**	**July 1 - September 8**	**September 9 - October 6**	**October 7 - Onsite**
Standard Rate	**$440**	**$490**	**$515**	**$540**
Group Discount - 5 or more	Groups 5+ Deduct $30	Groups 5+ Deduct $30	Groups 5+ Deduct $30	Groups 5+ Deduct $30
Group Discount - 8 or more	Groups 8+ Deduct $50	Groups 8+ Deduct $50	Groups 8+ Deduct $50	Groups 8+ Deduct $50
All group registrations must be received at the same time.	Groups 20+ Deduct $70	Groups 20+ Deduct $70	Groups 20+ Deduct $70	Groups 20+ Deduct $70
Parent Rate *(A letter describing your child's disability must accompany registration)*				**$275**
Full-time Student Rate *(Proof of full-time student status must accompany registration)*				**$300**
Presenter Rate		**$350**		**$400**
Exhibitor Rate		**$350**		**$400**

Single-Day and Exhibit Hall Only Registration	Price
Thursday Only - October 20	**$275**
Friday Only - October 21	**$125**
Exhibit Hall Only - Tuesday evening through Friday, October 18-21	**$150**

Preconference Workshops - Monday and Tuesday, October 17-18, 2016 Includes Preview of Exhibits – Tuesday Evening, October 18	Price
Monday, October 17 *(Some preconference workshops carry an additional fee for materials)*	**$275**
Tuesday, October 18 *(Some preconference workshops carry an additional fee for materials)*	**$275**
BUNDLED PRICING! Monday and Tuesday Bundle ($60 savings)	**$490**

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A Visual Makeover

THURSDAY, SEPTEMBER 15TH, 2016
1:00 PM - 2:30 PM CDT

During the school years, we learn that children with autism respond well to visual supports. These visuals help students transition, complete tasks and support instruction, behaviors, social skills, communication and so much more. There is so much to create and so little time to produce all the visuals needed. We will review the benefits of visual supports, what versions these supports can come in and many websites that offer pre-made free visual supports. We will also review free or low cost websites to create your own visuals. There will be many different examples of visual supports to use throughout the day.

Statement of Need:

Educators, parents and therapists have to juggle differentiating instruction, reinforcing behaviors, supporting various sensory needs and meeting state standards all at the same time! That does not leave much time left in order to create the visual strategies that have been found effective in order to support all of these areas and more. This webinar will not only reinforce why visuals are important, but also show where to locate, how to make and how to use..

MO BUTI

On-Screen Keyboards for Tablets and Chromebooks - Customizing Your Screen

MONDAY, OCTOBER 3, 2016
10:00 AM - 11:30 AM CDT

On-screen keyboards can provide visual supports for writing via color-coded keys, alternate font, larger keys and handwriting recognition, which allows students to use a stylus to write. Other support tools include word prediction, voice recognition in keyboards on all platforms, mathematical symbols and even Sign Language Emojis and animated GIF keyboards.

Learn how to download, install and activate them, including adjusting the order of keyboards that can be displayed on iPads, changing on the fly on Android tablets, customizing and setting defaults, customizable keyboards for Mac and PC, international keyboard keys and layouts and more.

DAN HERLIHY

Captioning Video - Adding Supports for Understanding

MONDAY, NOVEMBER 7, 2016
1:00 PM - 2:30 PM CST

Learn how to use a variety of easy-to-use computer, iPad and Web-based programs to add captioning to video, including adding picture support within video, video in video and multi-language supports. Areas covered will include all-in-one solutions where video can be imported, edited, have captioning added and then exported for use without the need to create time-coded text transcripts first; Web-based applications for uploading and captioning your video for playback on YouTube or Vimeo; captioning video directly on YouTube; and simple, easy-to-use apps for iPad for adding basic burned-in subtitles for playback on any device.

See how captioning can provide additional support for understanding, as well as online sites that allow you to add embedded quizzes to video. Handout will include free software for use on computers or online, trial software and basic directions.

DAN HERLIHY

Research Tools - Apps, Extensions and More

MONDAY, DECEMBER 5, 2016
10:00 AM - 11:30 AM CST

Whether you're researching online using an iPad, Chromebook, computer or tablet, having the right tools for support, as well as search tools, can have a big impact on access, organization, presentation of information and success. This session will cover online search sites and search tools, Chrome Extensions and apps for tablets, as well as tools embedded within programs. Some students need visuals, others key facts to help them organize. Learn how they can capture information with the source automatically cited, work with side-by-side windows for researching and note taking, tools providing text-to-speech for struggling readers and more.

DAN HERLIHY

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DAN HERLIHY, AT/Technology Resource Specialist, Connective Technology Solutions, Inc., Hoosick, NY.

MO BUTI, Ed-BD., M. Ed-ADMIN., QIPD Certification, Director of Special Education certification, Type 75 Administrator certification; Owner of AiepA. Served as Director of Program Development for Neumann Family Services. Prior to Neumann, directed autism programs and services for over 6,000 students as Manager of Autism and Intellectual Disabilities at Chicago Public Schools.

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- ✔ **The Next Generation in AAC: What Research and Mobile Technology Offers - Sponsored by SuperPlus**
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product spotlight

Widgit releases InPrint 3

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Redeveloped from the ground up, InPrint 3 is simpler and quicker to use, saving you hours in preparation.

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InPrint 3 is an essential tool for anyone making accessible materials for their school, home, business or community.

InPrint 3 uses Widgit's powerful smart symbolizing technology and is supplied with more than 15,000 Widgit Symbols, which have been developed to support communication, access to information and many school curriculum subjects.

With InPrint, teachers, nurses, therapists, care workers and many other professionals can easily design resources specific to their needs.

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- Add your own photographs and pictures or copy straight from the Web
- Add images and illustrations from more than 4,000 Widgit Media images
- Recolor symbols and change skin tones

LANGUAGE TOOLS

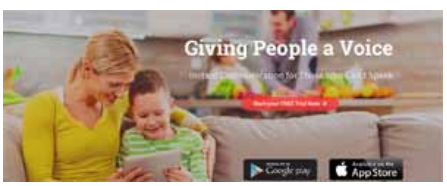
- Picture spell checker
- Smart symbolization based on parts of speech

TECHNICAL

- Network friendly - Windows 10, 8, 7, Vista, XP compatible

LEARN MORE

TippyTalk translates pictures into text messages



TippyTalk was created by Rob Laffan, the father of a 5-year-old girl with non-verbal autism.

Rob understood the way in which his daughter viewed the world around her visually. Frustrated with the communication solutions that were available for his little girl, he decided to create a tool that parents could use to very simply build and design their own unique communication solution specifically for their loved one.

TippyTalk's purpose is to provide a communication solution that creates social communication independence for people with verbal disabilities.

The TippyTalk app is the first of its kind; we are the first communication tool that removes the person living with the verbal disability from the limitations of same room communication and opens the door to the world around them.

TippyTalk allows a person with a verbal disability to communicate by translating pictures into text messages, which are then sent to a family member's or care giver's phone or tablet.

This allows the person who is non-verbal to communicate and express a desire, want, need or feeling.

LEARN MORE

HumanWare Partners with KNFB Reader, LLC and National Federation of the Blind

Nearly every blind person encounters print material on a daily basis—whether it is a paper handout in a classroom or meeting, inaccessible content on a screen or personal mail. In the past, such situations would require the blind person to ask for assistance and, often, to wait for that assistance. The launch of KNFB Reader for smartphones forever changed the significance of receiving an inaccessible piece of paper. Now a blind user can simply snap a picture with their smartphone and have the print read to the user in seconds.

HumanWare, KNFB Reader, LLC (KNFB), and the National Federation of the Blind (NFB) have taken instant access to print content even further. Both HumanWare and NFB have always been primary advocates of Braille literacy and share the belief that Braille literacy is directly related to success in employment. Building from this belief, along with a desire to empower individuals who are blind with a tool that can turn print into Braille in seconds, HumanWare, KNFB and the NFB have partnered together to offer the KNFB Reader as a freely included app on the BrailleNote Touch.

"Someone once told me they dreamt of a world where all print material could instantly be replaced with Braille. Today, with this partnership, we are making that dream a reality," said Greg Stilson, HumanWare's Product Manager of Blindness Products.

This March, HumanWare launched the BrailleNote Touch, the most powerful Braille productivity tool ever built. The first and only Google-certified Braille tablet, the BrailleNote Touch combines the efficiency and simplicity of a traditional Braille notetaker with the power and open mainstream apps of an Android tablet. Equipped with a customized touch surface or optional Braille keyboard, a built-in Braille display and an 8-megapixel camera, the combination of the BrailleNote Touch and the KNFB Reader is a natural marriage.

"As an organization that strives every day to raise expectations for the blind, the National Federation of the Blind applauds the work HumanWare and Google have done to create an innovative product that breaks down the traditional barriers using assistive technology. It was only fitting to empower this technology with the best print recognition tool, and we are excited that BrailleNote Touch users will immediately have access to the KNFB Reader," said Mark A. Riccobono, President of the National Federation of the Blind.

HumanWare is aiming to include KNFB Reader in a free BrailleNote Touch update in September. All existing BrailleNote Touch users will receive a notification on their device when this update becomes available and can initiate the wireless update immediately.

For more information about HumanWare and the BrailleNote Touch, please visit: www.humanware.com

The National Federation of the Blind knows that blindness is not the characteristic that defines you or your future. Every day we raise the expectations of blind people, because low expectations create obstacles between blind people and our dreams. You can live the life you want; blindness is not what holds you back.

For more information about the National Federation of the Blind, please visit: www.nfb.org

To learn more about the KNFB reader you can visit: www.knfbreader.com

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