Across the summer of 2015, three separate focus groups were held with educators and special educators to determine how successfully TX-KEA could be used with students with disabilities. The first focus group was held at a well-regarded school for children with language and social difficulties (The Parish School). The second focus group was conducted with a range of professionals within the Houston Independent School District. This group included diagnosticians, speech pathologists, occupational therapists, and professionals who worked in the assistive technology department. Finally, in July 2015, we conducted a Special Needs focus group at the Texas School Ready 2015 Summer Institute.

Notes from focus group: The Parish School:

The focus group occurred with 7 teachers at The Parish School. The meeting started with a demonstration of the actual assessment tasks. In general, teachers were reasonably impressed with the measures. However, some teachers commented that the assessment was visually distracting or that assessment tasks included too much extraneous visual information (e.g., too much color and flashing on the Dimensional Card Sorting Task). However, other teachers reported that some tasks (e.g., Letter Recognition Multiple Choice) were too sterile and teachers worried if children would lose interest in the task.

In terms of the pace of the assessment, teachers recognized that typically developing children would have no difficulty with the speed or pacing of the assessment. However, some teachers worried the children with special needs might have difficulty processing some of the verbal instructions embedded within certain tasks. It was recommended that teachers be provided with the ability to repeat instructions and item prompts whenever possible. In addition, most teachers were in favor of being allowed full control over the speed or pace of the entire assessment.

Specific concerns: Spacing and Use of Screen:

Teachers reported that they felt the some of the images were too small. They suggested that bigger pictures be included whenever possible and that the full screen of the device should be used. In general, teachers felt that there was too much empty space (i.e., background). Teachers suggested that pictures be enlarged within the Science assessment. In addition, teachers suggested that some of the math counting pictures would be more user-friendly if there was more spacing between objects being counted.

Language: teachers suggested that language for all subtests should be evaluated and simplified whenever possible. For instance, on the Working Memory task, teachers suggested changing the phrase “where was the blue car parked?” to “where was the blue car?”

Focus Group with HISD Special Educators:

In reality, this focus group seemed to provide helpful information in two distinct areas. Specifically, the diagnosticians, speech pathologist, and occupational therapists provided us with general information about the assessment. In contrast, two individuals employed within HISD’s Office of Assistive
Technology provided several comments about ways in which TX-KEA could be adapted for children with severe disabilities.

**General Comments:**

Diagnosticians and other professionals felt that teachers should have full control of the TX-KEA platform. For instance, participants indicated that it would be helpful if teachers were able to repeat sample items, review instructions, or repeat items. As the final design of the TX-KEA platform had not been determined, we were unable to provide these professionals with specific details about whether or not these features would be included in the final product.

In addition to concerns around the pacing/control of the assessment, these HISD professionals voiced many of the same concerns about the visual aspects of the assessment. For instance, the group felt that some of the items included distracting components (e.g., the flashing light that occurs in the dimensional card sort program). In addition, the group felt that better spacing would have been helpful on the mathematics subtest. The group felt that the artwork was outstanding and visually appealing. Similar to comments made by professionals at The Parish School, the group felt that it would be advisable to evaluate all of the language used within the assessment to determine if instructions or prompts could be simplified.

**Specific Comments Related to the Assessment of Children with Severe Disabilities:**

This portion of the discussion included comments from two professionals within HISD’s Office of Assistive Technology. UT-Health Faculty provided the group with some of an overview of how we expected the assessment to be used. For example, during the development phase of TX-KEA authors never envisioned that all subtests would be completed by children with significant developmental disabilities. Specifically, UT Faculty worked under the assumption the children with significant developmental disabilities would complete a few subtests (e.g., Vocabulary, Letter Knowledge, and Mathematics). In general, assistive technologies professionals understood this approach. However, they cautioned that many children with severe developmental disabilities would be able to complete all of the TX-KEA subtests if the assessment could be adapted/modified appropriately.

The group felt the schools working with children with disabilities would have the ability to successfully amplify audiophiles that contained instructions/test items. In fact, the group felt that most computers and amplification devices used by children with hearing impairments would be able to use the types of audio files that are used in TX-KEA. However, accommodations would need to made for children who use FM amplification systems. This is due to the fact that the FM system might develop feedback/reverberation when picking up the audio from speakers. However, the group recognized that if the child with a hearing impairment could use headphones the TX-KEA prompts could be amplified appropriately which would eliminate the need for using the FM system.

In terms of working with children with visual impairments, the group highlighted that many school districts/classrooms have the ability to enlarge images via projection devices. However, the group
cautioned that they would hope that all of the images used within TX-KEA would be of sufficiently high resolution so that the image would not be distorted when enlarged.

The group also felt that TX-KEA should be flexible enough to allow for teachers to input child responses. This would be especially important for children with multiple disabilities. The assistive technology professionals reported that almost all of the subtests that were receptive in nature (e.g., children able to answer questions via pointing) could be adapted to be used with children with severe motor disabilities (e.g., cerebral palsy or other neuromuscular disorders). In some cases children can approximate the act of pointing by using input devices (e.g., mouth sticks, head wands, single switch access, sip and puff switches, and eye tracking devices). The assistive technology experts advised that there are certain technical requirements that would need to happen during development to allow these types of devices to be used by children.

A great deal of discussion surrounded children with multiple disabilities. Here are a few of the key messages from the professionals in HISD.

- The staff of HISD that evaluates children with multiple disabilities has expertise at adapting materials to the needs of individual students. Therefore, the more control that we provide the assessment professionals the more they can adapt the measure to the needs of the child. For instance, if we allow districts to have access to the image files, assistive technology staff can magnify these images and incorporate them into devices that are highly accessible. An overview of partner assisted scanning was provided.

  In partner-assisted scanning, the communication partner presents messages or letter choices in a sequential fashion to the individual who wishes to communicate something, and the individual then makes their selection. Scanning refers to the process of items presented one after the other, in the same patterns, until a choice is made as the desired item is reached. Items can be presented either visually, by pointing, or auditorily, by speaking.

Special Needs Focus Group at the Texas School Ready 2015 Summer Institute

This focus group took place at the Texas School Ready Early Childhood Summer Institute and included kindergarten and pre-kindergarten educators and parents who worked with children with special needs. The meeting began with a short presentation about the purpose and goals of TX-KEA. In general, teachers were excited about the assessment. However, many of the participants were worried about the timing of the assessment. Some were concerned that the assessment may be given too early and that children may not be settled into their classroom, skewing the results. Others were interested in using the assessment as a pre-kindergarten exit exam, a thought that worried other participants.

In addition to the timing, some participants expressed concern about the assessment being conducted on a computer. These participants were worried that the assessment might be testing a child’s computer skills compared to their knowledge. One participant recommended that we should create a demo mode for teachers, so they can see if a child will be able to navigate the system. Another suggested that teachers should be given the option to give the assessment twice to special needs children. During the first assessment, the child would go through appropriate measures on his or her
own. If the child received a low score, the teacher could go through the assessment with him or her a second time to see if the score was truly representative of the child’s knowledge, compared to a potential lack of computer skills. Teachers also requested for the ability to answer for a child if the child says the right answer but doesn’t touch the screen.

Specific Concerns for Children with Special Needs

After the general discussion, participants were shown various measures and were asked for their feedback on how the assessment would be received by children with special needs. All of the participants agreed that teachers needed the ability to repeat the question or a guide of acceptable ways to rephrase the question.

The participants were also concerned about the language used in the assessments. Some felt as if the assessments used too advanced vocabulary, such as the word “prop” and “illusionist.” Other times, they thought that the directions were too complex for children to understand. One participant stated that children with special needs require explicit directions that outline every step and tell the child exactly what they need to do. For example, on the Rabbit-Boat measure, the participants thought the directions changed too much and were confusing. One participant thought we should add in a phrase to help focus the child’s attention on the directions, such as “Don’t let me trick you.” While the participants wanted more directions on a majority of the assessments, they thought the directions were repeated too many times in the Butterfly-Bee measure. They also didn’t like that the bee would break the net if captured. They felt as if this was an unnecessary lie.

The participants also discussed the quality of the illustrations in the assessments. Specifically, they thought some of the illustrations need improvement, stating they were dark, needed more details, or were too small. One participant thought that adding in the names of the answer choices in the question might help clarify sub-par illustrations. For example, a question could read, “Where does a deer live: the forest, the desert, or the ocean?” This would help the child identify the illustration if it was unclear. Once again, the participants stated a need for a guide of acceptable ways to rephrase the question.

Lastly, the participants mentioned that we should not acknowledge a right or wrong answer. One participant was worried that a child might intentionally choose a wrong answer because they enjoyed the wrong-answer acknowledgement that followed more than they liked the right-answer acknowledgement.