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EMA Interviews KinderLab Robotics, Reading Horizons, UWorld, and MIND Research Institute

This past month *Education Market Advisor (EMA)* had a chance to have an in-depth video chat discussion with four [ISTE Live 22](#) conference attendees: **Jason Innes**, Director of Curriculum, Training and Product Management at KinderLab Robotics, **Jenny Kier**, Education Specialist at Reading Horizons, **Jeff Elliott**, Chief Operating Officer at UWorld, and **Kelsey Skaggs**, Communications Manager at MIND Research

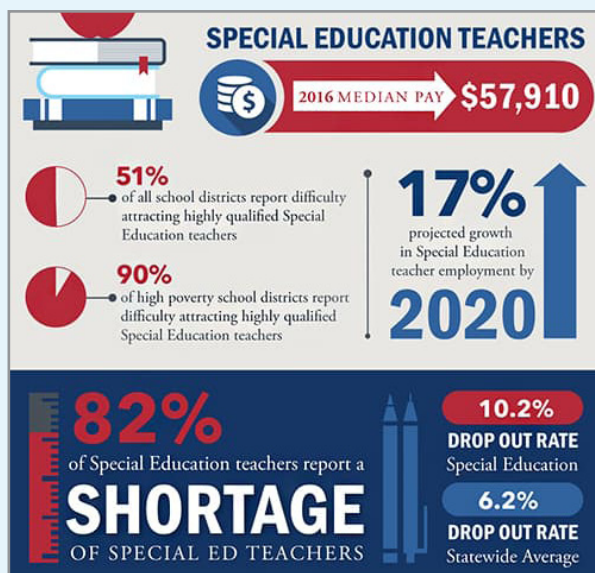
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Understanding the Teacher Shortage: Focus on Special Education Teachers

At the beginning of the pandemic, many experienced teachers retired early due to COVID-19 health worries, while others left the profession due to the difficulties of adapting to various challenging institutional and instructional changes. The ultimate implications of the ongoing teacher shortage remains to be seen and a future *Education Market Advisor* article will look at this matter in some depth; however, this article will

Continued on p. 4

EMA Pulse: Special Education Teachers: Facts and Challenges



A shortage of special education teachers is being reported by 49 states.

Source: TeachersofTomorrow.



Simba
Information

K-12 Supplemental Materials Market

Simba has estimated the size of the K-12 instructional supplemental materials market to be \$3.8 billion in 2020 and is forecast to grow to \$4.6 billion in 2024, representing a CAGR of 5.3% and an increase in the share of the total K-12 instructional materials market from 43.9% to 45.7%. This is one of the highlights of Simba's just released report.

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ISTE Live 22, cont'd. from p.1

Institute. We discussed each company's latest products, company changes caused by the pandemic, and their company's outlook for the 2022-2023 academic year.

Companies at a glance:

- KinderLab Robotics** (Waltham, Massachusetts) is the creator of **KIBO**, a STEAM robot kit that was developed based on 20 years of children development research, and accompanying teaching materials that help to integrate STEAM elements into the curricula. According to [KinderLab Robotics](#) research, young learners (ages 4-7) that use KIBO have shown improved early childhood sequencing abilities, improved computational thinking with concrete tools, and has helped in counteracting gender-based STEM stereotypes. The product has also been shown to positively impact underrepresented groups in STEM.



Figure 1: The KIBO Robot Kits from KinderLab Robotics encourages students to play constructively, problem-solve, and think critically through creative educational activities.

Source: [KinderLab Robotics](#).

- Reading Horizons** (Kaysville, Utah) is an Orton-Gillingham based foundational reading program aimed at increasing reading proficiency in students in early childhood (grades K-3). The company expanded its flagship reading program in May 2022 to include **Sound City**, a set of instructional activities that help students in K-2 connect speech to print using decoding and spelling skills.
- UWorld** (Dallas, Texas) provides a customizable learning tool for high-stakes exams for students in grades 9-12 and higher education. The company provides question banks and other

The Reading Horizons Discover Program

The new Sound City phonemic awareness component includes engaging lessons and classroom materials to improve K-2 students' ability to build momentum toward reading proficiency.



Figure 2: The Reading Horizons Discover Program includes a phonics component called Sound City.

Source: Reading Horizons.

learning tools for accounting, high-school high-stakes exam prep for ACT, PSAT, and SAT, finance, graduate school high stakes exams, MCAT, and for legal, nursing, and medical students. In response to educator feedback, on June 8, 2021, the company launched the **UWorld Learning Platform**, a platform for educators designed to assign content and monitor individual student, cohort, district, and campus-level performance.

The UWorld Learning Platform

STUDENT	AVG	System 2 Review DUE 3/16/21	System 1 Review DUE 3/15/21	System 1 Prep DUE 2/25/21
Foster, Lois L.Foster@teststudent.com	80%	100%	80%	90%
Patterson, Joshua J.Patterson@teststudent.com	94%	80%	98%	96%
Robinson, Rose R.Robinson@teststudent.com	70%	80%	86%	66%
Washington, Ruth R.Washington@teststudent.com	92%	100%	90%	88%

Figure 3: The UWorld Learning Platform provides educators with a place to compile performance data, assign content to students, and monitor student or cohort proficiency.

Source: UWorld.

- **MIND Research Institute** (Irvine, California) is a nonprofit social impact organization that specializes in neuroscience and education research. The Institute created **ST Math**, a PreK-8 instructional program that uses spatial-temporal reasoning abilities in mathematics instruction to help students develop a solid math foundation, and provide students with equitable learning using puzzles, non-routine problem solving, and formative feedback.

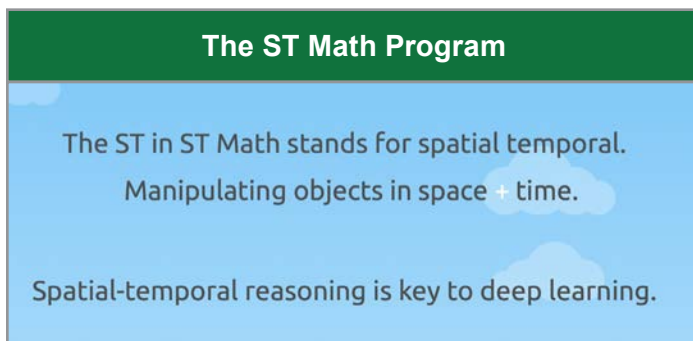


Figure 4: ST Math uses spatial reasoning activities to encourage students to develop a deeper understanding of math concepts.

Source: ST Math.



Figure 5: Students help "JiJi" overcome obstacles by solving math puzzles as she crosses the screen every time a student successfully completes a math puzzle.

Source: ST Math.

Below is an edited summary of our discussion.

[Note that we identify the speaker via prefacing the response with (KLB) for KinderLab Robotics, (RH) for Reading Horizons, (UW) for UWorld, and (MRI) for MIND Research Institute.]

Q. What led to the creation of your company?

(KLB) - The company grew out of a research lab at Tufts University in Boston where our chief scientist, Dr. Marina

Bers, performed research on how young children engage with technology and how we can use kind of technology to drive learning experiences and support child development. Dr. Bers and her team developed the theoretical foundation and the robotic prototypes that became KIBO, with the support of the National Science Foundation.

(RH) - Charlotte Lockhart, a reading teacher that was Orton Gillingham trained [Editor's Note: *The Orton-Gillingham Approach is a literacy education approach that was named after the creators Samuel T. Orton, who was a neuropsychiatrist and pathologist, and Anna Gillingham, who was an experienced educator and psychologist.*] The literacy instruction is characterized by direct, multisensory, structured, sequential, diagnostic, prescriptive, and evidence-based instruction and it is often used with individuals that struggle with literacy, such as students with dyslexia). The instructional approach she created took the pieces of Orton-Gillingham along with other research-based strategies to develop the original Discover Intensive Phonics for Yourself curriculum. Lockhart began doing trainings with other educators to share what she found that helped students create the foundational skills needed to learn how to read. Reading Horizons created software in 1984 that corresponded to Lockhart's curriculum that developed into the current Reading Horizons instructional materials and programs.

(UW) - The company grew out of a need to help students succeed in either preparing for a test or remediating in some subject areas. Our Advanced Placement curriculum, for example, grew from the need to provide schools with AP curriculum that met the end of course testing requirements. The program has now grown to be used in general courses as a supplement or curriculum replacement.

(MRI) - One of our co-founders, Dr. Matthew Peterson, grew up with dyslexia and struggled in school. Because of his personal experience, Dr. Peterson began working with researchers in 1994 to prove that math could be taught without language because he fell in love with the visual representations of math. He created ST Math so students could interact with math concepts visually and overcome the language barriers in math education.

Q. Did the pandemic produce any changes in the company's approach or its products? If so, what do you feel will stick from those changes?

(KLB) - The pandemic, I think, was hardest on early childhood education because at that age they're learning how to engage with each other and how to communicate effectively. When the pandemic hit, it became imperative to help young students move around and engage socially rather than sit behind a screen. Keeping that in mind in post-pandemic education, helping students engage in learning opportunities that support social and emotional development is the concept supported by KIBO's design philosophy.

(RH) - One of the things that we did as soon as COVID hit was pivot hard and make every single lesson available online so that teachers who were teaching synchronously could see what the lessons look like from a student's perspective before they're given online. We quickly applied those changes and they are still available for teachers today. We also created a student subscription pass that allowed students to practice literacy skills using online lessons. Students were able to better apply and transfer new literacy skills from the lesson.

(UW) - I think that the biggest thing we did during the pandemic was to give away a lot of free subscriptions and extensions to students. For example, students that bought a 180 day license for a test that was rescheduled or canceled due to the pandemic

"The biggest thing we did during the pandemic was to give away a lot of free subscriptions and extensions to students."

Jeff Elliott, Chief Operating Officer, UWorld

were offered a license extension so they could practice with the material at a later date. The biggest thing that we changed during this time was student counseling. Our students were a little lost because of the various changes caused by the pandemic and it

was really hard for them to reach out. So, we found ourselves spending more time talking to students about their testing options and ways to manage stress in the new educational environment.

(MRI) - We're always making changes to the program based on the feedback of our educators and students, but we saw an increase in parent communication during the pandemic. We made our home school program free during the pandemic so parents and students were able to walk their child through the program.

Q. What do you anticipate for 2022-2023?

(KLB) - My prediction for the year is that there will be an increase in district interest and investment in educational tools and materials. We're seeing that districts are becoming more willing to invest in equipment and curriculum for the next year that are developmentally appropriate and supported by strong evidenced-based research. Districts are finding that the ESSER funds are best spent on equipment investments because the money is not recurring and is best spent on products that have a strong PD support and detailed curriculum that supports student learning.

(RH) - We are expecting our new curriculum to come out soon. We're not changing the method at all because we know it works but we are bringing in new decodables in a new structure for the upcoming version. The new version will be digital and will be accessible across all digital devices (including iPad).

(UW) - We're seeing growth in all of our areas and I think

teachers and schools will expand into complementary spaces. We look to the areas where there are high failure rates and then we look at what can be addressed through our product line. For example, the CFA exam success rate was at 40% two years ago when we took on the section but due to the pandemic the success rate has been in the 20-30% range. So, we feel that will be a real area of opportunity for us going forward. We are also ramping up our animations. In the past, it's been mostly fixed illustrations but we've hired four animators to work on animating illustrations so we're going to see a significant animation improvement in all of the content areas.

(MRI) - Educators have mentioned that when it comes to students' social and learning skills, the pandemic had a noteworthy and disturbing impact—an increase in behavioral issues and a decline in student engagement. Kids are further behind now than before the pandemic and there's a little bit of an extra struggle in the classroom. There's a big push for encouraging excitement in the classroom, wanting kids to be excited to be back in the classroom, while learning. To encourage excitement among students we've released monthly and weekly challenges and contests on ST Math to drive usage and excitement (For example: March Madness and Winter Waddle). We've been blown away with the hunger to really drive student engagement and get the kids excited to be back in the classroom. We will maintain our challenges and contests in the new academic year and we will empower educators to use all the resources at their disposal (For example: our ST Math Educator Console allows educators to personalize the learning experience based on their students' data).

If you're interested in learning more about ISTE and want the opportunity to engage in discussions with experts and colleagues in the field of educational technology, make plans to attend the ISTE Live 23 Conference that will take place in Philadelphia on June 25-28, 2023.

Teacher Shortage, cont'd. from p.1

take a closer look at one specific type of teacher shortage: that is, the shortage of special education teachers.

The Shortage in Special Education Teachers

The teacher shortage has been on the minds of many as the nation's schools begin planning for the 2022-2023 academic year. The shortages have occurred across all subject areas and grade levels but have been more keenly felt in special education. While many believe COVID-19 was the catalyst for teacher shortages, a consistent decline in special education teacher preparation courses has been occurring since 2005.

According to the **IRIS Center** (Nashville, TN), a national center