

# FIELD TESTING CELL-ED

## MOBILE LEARNING FOR ALL



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## ABSTRACT:

Field testing of Cell-Ed with immigrant service workers proved the potential and power of mobile learning to bring life and career changing educational opportunities to millions of adults motivated to upskill, who cannot attend classes. It also demonstrated how mobile learning can extend and differentiate instruction and increase outcomes for adults within programs. The research also brought to light the value of mobile coaches and supports during onboarding.

## Introduction

"I used to be bored at my kids' soccer practices and swim lessons but now I study English on my phone." - Ana

Like her co-workers in a recent Cell-Ed pilot, home health care provider Ana appreciated the mobile learning platform for enabling her to study anytime, anywhere entirely by phone. A single mother juggling multiple clients and responsibilities, she learned the specific English vocabulary she needed to care for an English-speaking client and qualify for a dollar an hour wage increase.

When recent immigrant Julio started workplace English classes at the Seaport Hotel that he cleans, teachers worried he might drop out of class as his English was far below that of his coworkers. Fortunately, he was able to study both inside and outside of class on a Pre-ESL level of Cell-Ed that offers bilingual instruction. His teacher credits Cell-Ed for his stunning progress in learning new vocabulary and starting to speak confidently in just a few weeks with accurate pronunciation.

For the past year, the EdTech Center @ World Education has field tested technologies that support learning and career advancement for adults who are working hard to overcome barriers to traditional schooling and career pathway development. The field testing is funded by Walmart, and the technologies are funded in part by



Ana (center) qualified to earn a dollar more per hour by caring for an English speaking client after studying on Cell-Ed. She is pictured with staff from United HomeCare and National Domestic Workers Alliance.

the [Employment Technology Fund](#). It invests in technology solutions that improve employment opportunity for lower-skilled, lower-income adults in the United States. Over 36 million have low literacy skills, and 89% are unable to attend traditional classes (OECD, 2013). Technology promises to fill the gap, and the EdTech Center is fortunate to be on the front lines of researching how to leverage digital strategies to increase the reach and outcomes of education and workforce initiatives (Rosin, Vanek, Webber, 2017).

One such promising technology is [Cell-Ed](#), a mobile learning tool that teaches literacy, language, and job skills, via three-minute micro lessons. Learners access Cell-Ed courses anytime, anywhere and even on the go using a flip phone, smartphone, tablet, or laptop. They study through interactive text and audio voice lessons narrated by real teachers - whether using an app or simply calling in - no internet or data plan required. Cell-Ed also provides learners a live Cell-Ed coach who follows and supports each learner using texting and even phone calls to nudge, motivate, and provide feedback and further instruction.

The EdTech Center has recently wrapped up field tests of Cell-Ed in two different contexts: 1) blended learning for hospitality workers at the Seaport Hotel in Boston who used Cell-Ed in conjunction with an in-person ESL class and 2) a distance learning model in which home health care workers in Miami used Cell-Ed completely independently after learning of it through their employer and the [National Domestic Workers Alliance](#).

The findings shared here are also supported by data provided by Cell-Ed and the [Service Employees International Union](#) (SEIU) that allowed for comparing learnings from EdTech Center field tests to learnings and outcomes from use of Cell-Ed in varied contexts across the country with frontline health care workers.

Our review of learner engagement in both blended and 100% distance learning models has shown Cell-Ed's flexibility. It has also deepened our interest and belief in the potential and power of mobile learning (mLearning) to reach and upskill the millions of lower skill adults currently not able to attend regular classes.

## Field Tests Support Cell-Ed Improvements

The two varied contexts of blended and 100% distance or standalone learning for our testing of Cell-Ed provided complementary data. We continuously analyzed the data from the start, rather than waiting until the end of the testing project. Cell-Ed used this data to make real-time improvements to their solution. We and our field test partners in turn iteratively refined our data collection process.

**"OUR REVIEW OF LEARNER ENGAGEMENT IN BOTH BLENDED AND 100% DISTANCE LEARNING MODELS HAS SHOWN CELL-ED'S FLEXIBILITY. IT HAS ALSO DEEPEDED OUR INTEREST AND BELIEF IN THE POTENTIAL AND POWER OF MOBILE LEARNING TO REACH AND UPSKILL THE MILLIONS OF LOWER SKILL ADULTS CURRENTLY NOT ABLE TO ATTEND REGULAR CLASSES."**

In this way, our research informed continuous updates to the mobile learning technology and learner experience. We share important findings gleaned along the way in the following observations.

# Distance Learning Anytime, Anywhere

In Miami, the story of Ana illustrates the learning needs of adults and the potential of mobile learning to bring educational opportunities to low-income adults juggling multiple jobs and responsibilities who cannot attend in-person classes. A recent immigrant from Cuba, Ana is a mother who juggles multiple clients she cares for as a home health aide and a regularly changing schedule.

Ana studied on Cell-Ed over 30 hours on breaks at work or late at night at home. “I learned new vocabulary words like linens, pants, diapers that I need to better communicate with my clients,” she said.

After studying on Cell-Ed, Ana demonstrated to her employer that she had learned the specific English she needed to care for English-speaking clients and thereby qualified for a dollar an hour wage increase.

Ana and 24 other immigrant home health care aides studied on Cell-Ed through our field testing as part of a unique partnership between [United HomeCare](#) (UHC) and the National Domestic Workers Alliance (NDWA) in Miami, which are collaborating to address the issue of the dearth of bilingual home health care aides available to care for the bulging elderly population in Miami.

To meet the need to help thousands of frontline care providers to become bilingual, the organizations smartly looked to mobile learning. UHC identified employees that a Cell-Ed placement test suggested were high-beginners and who had an interest in studying, and NDWA assisted with field test design and learner onboarding. Our analysis took into account the learner engagement data on Cell-Ed, transcripts of interaction with coaches, learner responses in interview questions, and observational notes on the onboarding provided to the learners.

Learners like Ana who were highly motivated to study somehow found the time, and a small group successfully completed the two 15-hour Cell-Ed courses in the short period of two months. Ana studied 33 hours!

A few others studied an hour or so per week. One such learner, Rosa, is a mother of two young children who had to drop out of community college due to lack of childcare. She reported studying when her kids were napping or if she could hide from them in the bathroom long enough to complete a quick lesson or two.



Cell-Ed instructional interfaces



Other learners spoke of studying on Cell-Ed during breaks and lunch, on the train, on the bus, or in their car waiting for their shift to begin. Most of the home health care aides studied on the go for 10 minutes or so at a time.

Amongst the Seaport Hotel employees and the United HomeCare home health care workers, there were several who would find time to sit down and study on Cell-Ed for an hour or two at a time, sometimes even with notebooks out to take notes, but such usage was less prevalent. One such learner, Antonio, shared of Cell-Ed's interactive micro-lessons, "I fall asleep when I try to read a book, but the short Cell-Ed lessons keep my attention."

so they had the opportunity to monitor their learners' work and respond in class to issues that they may have seen arise online.

As with the home care workers, portability was crucial for the hotel employees who, when interviewed, shared "I have it all the time in my hand," and "We have teacher any time any place with us." This portability allowed learners extra practice outside of class at their level, whenever they could, like at home after work." One learner with small children and no time to study used it on the bus or during work breaks.

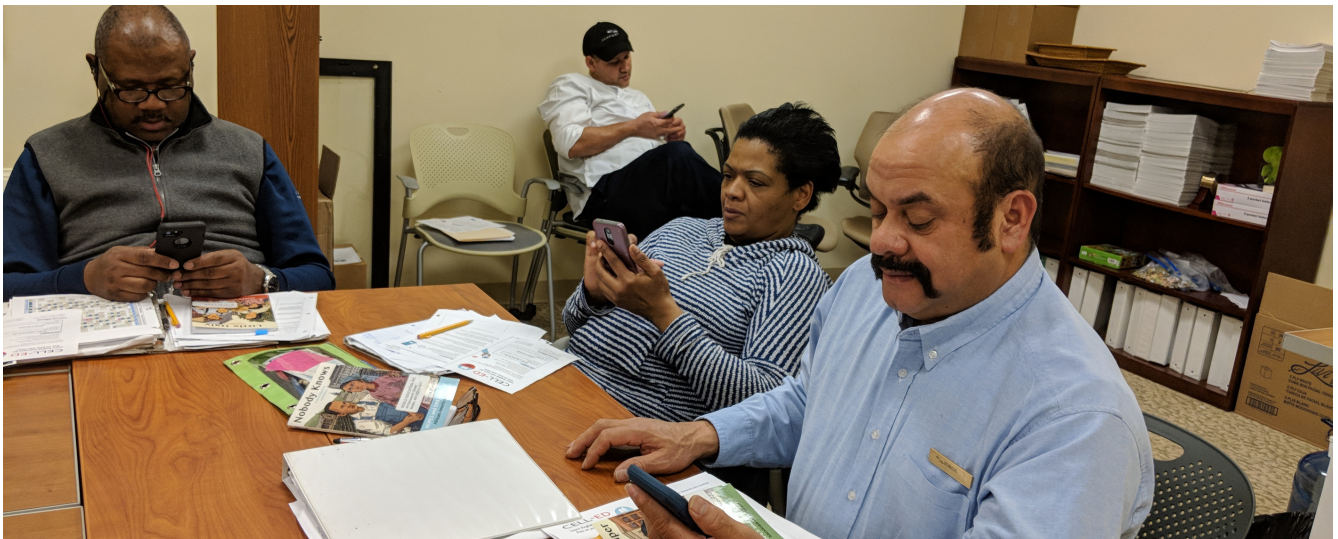
## mLearning in Blended Instruction

Teachers in the workplace ESL class at Seaport Hotel found Cell-Ed to be a flexible teaching and learning resource that they could assign to extend learning outside of the classroom or use to help differentiate learning for learners at different levels. The field test at the Seaport supported the efficacy of using mobile learning technology as part of blended instruction. Blended learning opportunities allow learners to work in two modes, both in class and online. In this case, the online was mobile.

Hospitality workers at Seaport used Cell-Ed on their smartphones to intensify their learning whenever they had time and wherever they were. The lessons in Cell-Ed were not closely synced to the instructional syllabus in the classroom, but the two teachers could access to Cell-Ed's back end Learning Management System (LMS),



Piloting Cell-Ed at the Seaport Hotel



Additionally, the teachers appreciated that the learners were motivated to use Cell-Ed to add extra time for learning in a new way. This was especially important for students like Rose, who according to her teacher was very quiet in class. Rose told us, “We learn by doing again. That’s why we study.” She spent nearly 60 hours studying on Cell-Ed and excelled. The different modality offered a chance for repetition, giving Rose a chance to shine. Another learner similarly appreciated the extra instruction she received on Cell-Ed, saying, “It is like having another teacher.”

The extra instruction outside of class by phone proved effective, as Seaport workers who put in significant additional instruction outside of class on Cell-Ed made notable learning gains on standardized tests including the BESTPlus and the TABE CLAS-E.

One of the teachers, Kathleen, noted that her class had such a broad skill range that her learners were using four different levels of Cell-Ed. Kathleen noted that she could use it to give everyone relevant learning opportunities.

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**"IT IS LIKE HAVING  
ANOTHER TEACHER."**

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“Occasionally I would work with a learner on a particular task while others were on Cell-Ed. Or, sometimes I encouraged my very beginning level learner to log on to Cell-Ed if we were working in class on material that was just too difficult for him. He always happily obliged!”

One such learner was Julio, a recent immigrant from El Salvador, whose English was far behind the level of his new coworkers. Because his level was so much lower, the classroom teacher was concerned that he might drop out. Fortunately, Julio was able to study on Cell-Ed at his level of Pre-ESL, which begins with bilingual instruction. “I am so impressed with his progress. I was stunned last week when he asked me in English for headphones, and with great pronunciation” said Kathleen. “He also made small talk with other learners about what type of food they like using specific language that I know he learned on Cell-Ed.”



## Blended Learning Supports Persistence

The most interesting finding from the Seaport Hotel is that the opportunity to start using Cell-Ed as part of blended learning seemed to support persistence in studying on Cell-Ed over the summer after their in-person classes ended. This finding was supported by data in two different ways.

Firstly, the Seaport field test had two phases, the blended learning phase for workers enrolled in the ESL class, and a stand-alone phase for workers who were not in the class. Data showed that the persistence in Cell-Ed was lower for this standalone group than it was for their in-class colleagues.

Also interesting is that the learners who completed two-levels using Cell-Ed in the blended scenario were those who persisted in learning through the summer after classes ended.

As of late December 2018, seven learners had studied in the last week, almost a year since having been introduced to Cell-Ed. This suggests that establishing a routine for independent learning while supported by a teacher in class may lead to continued learning after the class ends.

This is consistent with findings from other country-wide pilots of Cell-Ed with immigrant service workers. Pilots with Univision, Community Action in Texas, and the California Labor Federation revealed that (1) the amount of in-person practice, individual coaching, and/or coaching support a learner received correlated to greater persistence, (2) learners who received in person or personalized over the phone support during onboarding showed greater persistence, and (3) learners in high-quality blended learning classes showed completion rates of over 95% and were more successful learning independently after classes ended.

**“[The coaches] encourage second chances...so we can prove what we learned.”**



## Coaching an Essential Support

An affordance that sets Cell-Ed apart from other mobile apps for English language learning is access to bilingual coaches. Access to personal coaching was a surprise to the learners, but once accustomed to the idea, they enjoyed feeling connected to support. Several people commented that they didn't have a hard time navigating the app because the coaches helped them when they got stuck. Their perception of the coaches was that they were there to help them.

The learners from Seaport noted the quality and positive nature of feedback and encouragement from coaches.

“[The coaches] encourage second chances...so we can prove what we learned.”

“They make you prove yourself so you know you learned something.”

They relied on coaching to help with correcting writing mistakes and feeling connected to support. Many of the texts sent by coaches were automated reminders encouraging them to persist. Learners noted appreciating and feeling encouraged by these reminders, even if they didn't reply to the coaches directly. The learners loved the “stickers”, which are emojis, and the positive comments from coaches- both automated and live. They cited examples they especially liked such as “excellent, fabulous, well done, wonderful” and even “hmmmm”, the response one coach sent when one person got something wrong. They also noted that the coaches never say “this is bad,” but instead are always supportive.

## Designing for Multiple Needs

The goals of the employers partnering in both field tests centered on the need for workers to develop English language proficiency and specific skills in order to communicate with and provide effective service to monolingual English speakers at their workplace. At Seaport, these might be hotel guests or hotel staff. In Miami, the home health care workers need to communicate with English-speaking clients for whom they provide care. We found that there is a real need for these workers to gain proficiency in both daily, general English that can support oral and written interaction in their lives as well as on the job and domain-specific vocabulary and essential skills directly linked to success in their jobs.

“There is a design innovation challenge to finding the right mix of learning

content, depending on competing needs and interests of partners and learners.” says Jessica Rothenberg-Aalami, Founder and CEO of Cell-Ed.

This was particularly evident in the Miami field test. The learners interviewed appreciated the usefulness of the general English that they could use in their daily lives, while also indicating that the vocabulary instruction in the custom home health attendant (HHA) curriculum was particularly useful.

Ana, introduced above, talked about how the HHA course supported her vocabulary development for speaking at work, and how this supported her persistence because she saw her learning goals aligned with the HHA Cell-Ed curriculum. Ana found the program so helpful that she referred a co-worker as well as a cousin to it.

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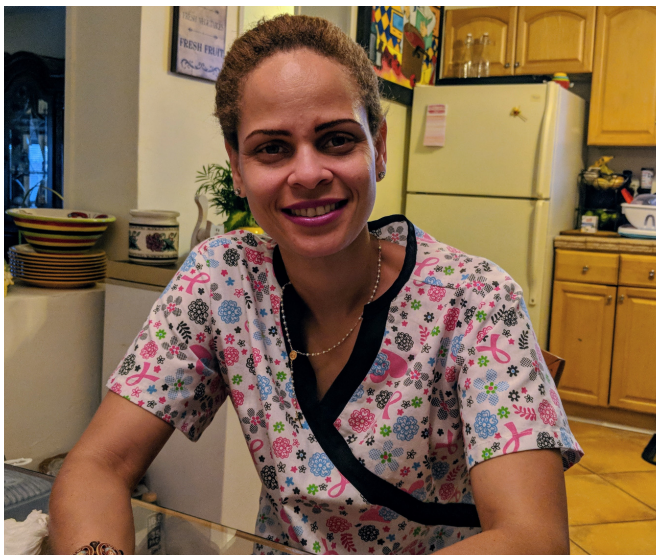
Another learner, Rafael, enjoyed interacting in short lessons on work vocabulary. “I liked that the program was interactive. I liked the teacher and listening to the conversations and answering the questions by text.” This observation is balanced with feedback from other learners about needing more practice with speaking coupled with feedback on their speaking. This might be achieved through conversations with coaches or in [peer-supported learning circles](#). Based on feedback from learners, adaptations to the software in support of this need are either in



discovery or in progress. Cell-Ed is likely to integrate more opportunities for practice and feedback on their speaking, including recording learners' voices, and opportunities to repeat specific sections of past lessons. Cell-Ed is also working with partners on implementation scenarios that provide opportunities for in-person interaction that can support proficiency development with spoken English.

## Onboarding Supports & Persistence

In both sites, the data gathered during the onboarding process show that some support is necessary for successful onboarding. There is tension in this finding with the need for openly accessible learning opportunities. As our partner in Miami put it, "We need to have a bus with a poster of Cell-Ed drive by and workers get the app and get started independently."



Indeed, the impetus for Cell-Ed development was to provide learning for adults not enrolled in a class. CEO Rothenberg-Aalami acknowledges this tension, "Education partners

want security, things like passwords and verification of learner accounts, but this makes simple onboarding a challenge. This is a great area for innovating considering different demands. It is one that we take seriously."

In response, Cell-Ed has developed a process and resources to support a range of onboarding scenarios for learners with diverse needs, including simplifying the mobile onboarding process. Supports can include wallet cards that learners can carry with them to remind them how to access Cell-Ed, coaches supporting learners through traditional phone calls, video-conferencing or text support, or in-person support from a classroom teacher or volunteers.

Data also informed a finding on the importance of initial placement, showing that shifts after initial placement created challenges to persistence. In Miami, participant data show that the introduction of the home health attendant (HHA) course after learners had made initial progress in the general ESL course likely had a negative impact on persistence. Coaching notes from Miami show that most of the learner-coach interactions were about the switch.

In Seaport, participation data show a lack of engagement after learners were switched to a new level after having been placed inappropriately. This occurred despite Cell-Ed coaches being available to support the shifts, and all learners who shifted courses had multiple contacts with a coach. Cell-Ed has responded to this finding by updating its onboarding and placement assessments.

## Looking Forward

Data from the two field tests suggest that Cell-Ed has the potential to fill a need for on-the-go learning required by working adult learners. Cell-Ed's interactive micro lessons provide an accessible ramp to digital learning for adults who need to study in short 5 to 10 minutes bursts. They are also accessible for learners with little to no digital literacy or experience with learning online.

The breadth of the curricula available, from foundational adult ESL to vocation-specific content, and the flexibility of technologies on which Cell-Ed can be accessed, break down barriers to mobile learning. Cell-Ed lessons can serve as a hook to connect lower-skilled adult learners to the wide range of digital learning opportunities available through apps or online, whether they are other higher-level Cell-Ed courses or programs that coaches could refer to the learners.

Additionally, the coaching support embedded in Cell-Ed provides the possibility of interaction and one-to-one instruction that can support persistence by mitigating the isolation that learners might feel working independently on other learning apps. These affordances of Cell-Ed drew praise from learner participants in our field tests: "This is the best app I ever used;" "It is for everyone!". Notably, learners in both testing locations wanted to know if they could share the app with their friends and family.

Cell-Ed has demonstrated success in other contexts. This is shown by their long-standing, successful partnership with the

[Office for New Americans](#) in New York, which brings English, citizenship, and now work readiness instruction to immigrants from farm workers to service workers across the state. Cell-Ed is a finalist in the Adult Literacy XPRIZE competition, and it is making traction with leading employers, as featured in a recent [Fast Company article](#).

Cell-Ed is increasingly being used to train frontline teachers, workers, and youth internationally on topics like basic education equivalency, health and financial literacy, vocational job skills, geography, and protection against gender-based violence. To deliver this training and education, the company has forged global partnerships with Discovery Learning, CARE, and World Education.

**"THE BREADTH OF THE CURRICULA AVAILABLE AND THE FLEXIBILITY OF TECHNOLOGIES ON WHICH CELL-ED CAN BE ACCESSED BREAK DOWN BARRIERS TO MOBILE LEARNING."**

This range of use scenarios suggests that Cell-Ed is a valuable addition to the learning technologies available for not just adult, immigrant learners in the United States, but for almost anyone globally with a mobile phone.

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\*Some names in the report have been changed to protect learners identities.



# Meet the AUTHORS



Jen Vanek is the Director of Digital Learning and Research at the EdTech Center @ World Education. Her work centers on teacher professional development, technical support, and research on the topics of digital literacy, adult learning, English language learning, and online learning. As part of this work she supports teachers and administrators to implement effective distance and blended learning, conducts field testing of learning technologies, and supports several English language and literacy education projects.



Alison Ascher Webber is the Director of Strategic Initiatives at the EdTech Center @ World Education. Alison develops and supports innovative projects that increase the reach and impact of education, workforce, and health initiatives. Current projects include working with the Employment Technology Fund, mobile learning in the United States and Cambodia, and the Applied Technology Center of public health leader, John Snow, Inc. Alison was first Executive Director of the Leadership Training & Education Fund for janitors across California and is a board member of Building Skills Partnership.

## THANK YOU TO OUR PARTNERS



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