Nurturing and Nudging Adult Learners through Text Messaging

Technology-Based TBCAE Coaching in Adult Education

Final Report for the Technology-Based Coaching in Adult Education (TBCAE) Project

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Acknowledgements

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TBCAE Project Context and Overview

Adult education programs strive to provide adult learners with engaging and effective services that support their development of foundational skills, attainment of a high school equivalency (HSE) credential, and planning for next steps in education, training, or employment. It is widely recognized that adult learners have busy lives and often find it difficult to persist in adult education services. Data on learners enrolled in adult education programs funded under Title II of the Workforce Innovation and Opportunity Act of 2014 indicate that a large percentage of adults in those programs leave before accomplishing their goals.[1] Challenges that adults encounter in persisting in adult education programs include competing demands in their lives, lack of childcare and transportation, limited access to resources that enable them to focus on their learning, or instruction that does not sustain their engagement or help them learn.

Adult education staff have used varied approaches to help adult learners address their non-academic barriers to participation such as connecting learners to resources that can mediate those barriers. Staff support learners' academic success by providing instruction that is engaging and builds their academic self-efficacy and by organizing extended learning opportunities through the use of tutors or online programs.[2]

There is increasing interest in the potential of "nudging" through text messaging as an efficient and low-cost intervention to support learners' persistence and progress. Early studies of the use of text messaging to increase college going among high-school graduates with low-incomes found that an automated and personalized text-messaging campaign to remind learners of required pre-matriculation tasks and to connect them to counseling support increased college enrollment among learners who had less academic-year access to quality college counseling or information.[3] Of particular relevance is a recent large-scale field experiment from the United Kingdom on the use of text messaging to increase learner attendance and attainment in literacy and numeracy programs for adults. The study found that the text messaging intervention had a large and persistent effect on learners' attendance and on their performance on literacy and

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[1] Jacobsen, E. (2020). The lessons of churn: Adult basic education and disciplining the adult learner. *Adult Literacy Education: The International Journal of Literacy, Language, and Numeracy,* 2, (2), 5-15. http://doi.org/10.35847/EJacobson.2.2.4

[2] Alamprese, J. & Cheng, I-F. (2021*). Compendium of innovative practices: Holistic approach to adult education services*. MSG and Abt Associates. https://lincs.ed.gov/sites/default/files/holistic-approach-adult-education-services.pdf

[3] Castle, B.L. & Page, L.C. (2015). Summer nudging: Can personalized text messages and peer mentor outreach increase college going among low-income high school graduates? *Journal of Economic Behavior & Organization*, 115, 144-160. https://doi.org/10.1016/j.jebo.2014.12.008

numeracy tests. This finding pointed to the usefulness of low-cost behavioral nudges with an adult learner population.[4]

To explore the potential of text messaging to support the engagement and success of learners in adult education programs, Abt Associates conducted the "Increasing Student Retention through Technology-Based Coaching" project (known as Technology-Based Coaching in Adult Education, or TBCAE) with funding from the U.S. Department of Education, Office of Career, Technical, and Adult Education during the period 2019–2022. During the project, we assisted 10 adult education programs in four states (Arizona, Indiana, Kentucky, and Oregon) in planning and implementing the use of individual and personalized text messages to support learners' participation in program services; development of foundational skills (e.g., reading, writing, numeracy, problem-solving); attainment of a secondary credential; and pursuit of further education, training, or employment. Four hundred and twenty adult education learners participated in the TBCAE project.

Implementation of TBCAE Project

Abt Associates' implementation of the TBCAE project involved:

- Recruiting adult education state offices and local programs to participate in the project.

- Developing materials and providing technical assistance to adult education program staff in planning their TBCAE project site and in preparing staff to use text messaging with learners.

- Providing ongoing assistance to adult education program staff in recruiting participants, using the text messaging platform, delivering text messages, and documenting learner actions from the text messaging.

- Disseminating information about the project's progress at national conferences.

The project's key approach to implementation was to encourage program staff to send primarily individual and personalized text messages that addressed barriers learners were encountering—or, more ideally, to pre-empt barriers by anticipating events or deadlines that learners would need to meet and to send text messages to prompt them to take an action. We also encouraged program staff to send text messages that encouraged and motivated them to persist with their learning and take steps to achieve their longer-term goals, such as earning a HSE credential.

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[4] Sanders, M., Kirkman, E., Chande, R., Luca, M., Linos, E., & Soon, X-Z. (2019). *Using text reminders to increase attendance and attainment: Evidence from a field experiment.* https://ssrn.com/abstract=3349116

Project Findings

Project Participants. The 10 adult education programs in the TBCAE project recruited 537 adult learners to participate in the project. Of those recruited, 423 (79%) consented to participate. Four hundred and twenty learners were part of the project when text messaging began in the programs.

The demographic characteristics of project participants were examined for learners in Indiana, Kentucky, and Oregon. The majority of participants were White women, which is typical of programs nationally. The ages of participants varied across states, with Kentucky serving participants who were younger than those in the other states. The majority of learners in the three states entered their adult education program with some years of high school, as would be expected. About half of the participants from the Indiana programs had some level of non-U.S.–based education.

Use of Text Messages. In developing their TBCAE project plans, the program director and staff from the 10 programs identified the learners' goals that staff would support by sending individual and personalized text messages. The goals for learners were:

- Progress in learning, enter a GED® Success Class.

- Attain a high school equivalency (HSE) credential.

- Complete dual enrollment program or an Integrated Education and Training Program;

- Prepare to transfer to further education, training, or employment.

During the implementation phase of the project, the programs' staff engaged in a total of 1,572 text message conversations and sent 343 group messages.

Purposes of Text Messages. We examined the primary purposes of the text messages that program staff sent to learners. About two-thirds of the text messages sent to learners were questions, while almost half were responses to questions. The approach of asking questions to learners using text messaging to engage them was consistent with what staff had determined during the planning for the project. A quarter of the messages offered encouragement or reinforcement to learners, and similar percentages of messages provided encouragement, updates, information, and feedback to learners.

Topics Addressed in the Text-Message Conversations. We identified nine topics that were addressed in the text-message conversations, which we organized into three categories— program management, learner progress, and next steps for education and training. We analyzed the text messages in terms of conversations, which were a series of connected text messages. This approach enabled us to capture the substantive meaning of the series of messages.

The program staff's text-message conversations addressed a range of topics, but the topics with the highest percentage of conversations concerned learners' overall progress and the preparation for earning a HSE. The next most frequent topic were programs' administrative procedures, followed by learners' academic progress, preparing learners for transition to further education or training, and learners' personal well-being. Less than 10 percent of the text-message conversations concerned use of technology, next steps to prepare for employment, or COVID-related information.

We examined the alignment between learners' goals for participating in the adult education program and the topics of the text messages that the program staff sent to learners. We found that the program staff focused their text-message conversations on the goals that they were encouraging learners to accomplish.

Another aspect of the text-message conversations that we analyzed was the staff's approach in framing their text messages. The highest number of text-message conversations involved motivating and reaffirming learners, followed by messages that connected learners to a next step to keep them focused on achieving their goals. The other three approaches provided advice to learners on issues; acknowledged an issue without necessarily advising learners; and connected learners' actions to their desired outcomes as a way of helping learners understand that if they take an action or persist, they are more likely to reach their goals.

Learner Outcomes. Because the programs' learner outcome data were not available for this report, we analyzed the content of the programs' text-message conversations to identify the types of outcomes that were mentioned in the text messages. Those data do not represent the total number of outcomes learners achieved during the project but provide a snapshot of the types of outcomes that staff reported in the text messages. The outcomes also illustrate the many progress steps that staff reinforced using text messaging to keep learners engaged and progressing. Outcomes are discussed for adult education program participation, HSE progress and attainment, and learners' transition for further education, training, and employment.

Program Staff and Leadership Perceptions of Text Messaging. At the end of the project's implementation phase, we talked with program staff and directors about their perceptions of the use of text messaging to support adult education learners. Program staff who had used text messaging with learners prior to the TBCAE project reported that they increased their use of individual and personalized text messages during the project, and that their use of individual text messages was more effective in engaging learners and in prompting them to respond. Staff who had not used text messaging with adult learners found it took a while to develop a routine for sending text messages to learners. After they established a routine, they found the text messaging a helpful way to support learners. The program directors thought the project had been well implemented and that use of text messaging was contributing to learners' progress in the programs.

Conclusions

Our analyses of the text messages and the feedback we received from the staff and program directors participating in the TBCAE project indicate that individual and personalized text messages can help adult education learners move forward in carrying out varied activities that can lead them to attaining their immediate and near-term goals. For the TBCAE project, those goals were adult education program participation and completion; secondary credential attainment; and transition to next steps of further education, training, or employment. The data from the project also indicate that there are many activities, large and small, that learners must complete to succeed and that they may need prompting and support for this range of activities.

The feedback from the program staff suggests that having a well-structured plan and process for using text messaging in an adult education program can facilitate staff's work and provide learners with strong support for their participation. The use of a text-messaging platform can enable staff to use text messaging in a secure environment. The use of a platform can also enable staff to identify patterns in text messages that reveal new barriers to learners' participation and the types of guidance, support, and resources that appear to assist learners in addressing their barriers. This information can be used adult education programs in guiding their management and provision of services.

Our analysis of text message conversations in the TBCAE project provided documentation of the challenges that adult education learners face in working to achieve their education goals and the constantly changing environments in which they live. The implementation of the project during the first year of the COVID 19 pandemic also was a unique opportunity to examine adult education programs' capacity to redirect their delivery of services while addressing new barriers to learners' participation occurring as a result of the pandemic. The timing of this project enabled us to identify how text messaging as a way to communicate with, counsel, and connect adult education learners with resources can be effective under very challenging circumstances for adult education programs.

TBCAE Project Context and Overview

Adult education programs strive to provide adult learners with engaging and effective services that support their development of foundational skills, attainment of a high school equivalency (HSE) credential, and planning for next steps in education, training, or employment. It is widely recognized that adult learners have busy lives and often find it difficult to persist in adult education services. Data on learners enrolled in adult education programs funded under Title II of the Workforce Innovation and Opportunity Act of 2014 indicate that a large percentage of adults in those programs leave before accomplishing their goals.[5] Challenges that adults encounter in persisting in adult education programs include competing demands in their lives, lack of childcare and transportation, limited access to resources that enable them to focus on their learning, or instruction that does not sustain their engagement or help them learn.

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There is increasing interest in the potential of "nudging" through text messaging as an efficient and low-cost intervention to support learners' persistence and progress. Early studies of the use of text messaging to increase college going among low-income high school graduates found that an automated and personalized text-messaging campaign to remind learners of required pre-matriculation tasks and to connect them to counseling support increased college enrollment among learners who had less academic-year access to quality college counseling or information.[7] Of particular relevance is a recent large-scale field experiment from the United Kingdom on the use of text messaging to increase learner attendance and attainment in literacy and numeracy programs for adults. The study found that the text messaging intervention had a large and persistent effect on learners' attendance and on their performance on literacy and numeracy tests. This finding pointed to the usefulness of low-cost behavioral nudges with an adult learner population.[8]

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[5] Jacobsen, E. (2020). The lessons of churn: Adult basic education and disciplining the adult learner. *Adult Literacy Education: The International Journal of Literacy, Language, and Numeracy,* 2, (2), 5-15. http://doi.org/10.35847/EJacobson.2.2.4

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To explore the potential of text messaging to support the engagement and success of learners in adult education programs, Abt Associates conducted the "Increasing Student Retention through Technology-Based Coaching" project (known as Technology-Based Coaching in Adult Education, or TBCAE) with funding from the U.S. Department of Education, Office of Career, Technical, and Adult Education during the period 2019-2022. During the project, we assisted 10 adult education programs in four states in planning the use of individual and personalized text messages to support learners' participation in program services; development of foundational skills (e.g., reading, writing, numeracy, problem-solving); attainment of a secondary credential; and pursuit of further education, training, or employment (Exhibit 1). Four hundred and twenty adult education learners participated in the TBCAE project.

Exhibit 1. Participating States and Adult Education (AE) Programs in TBCAE
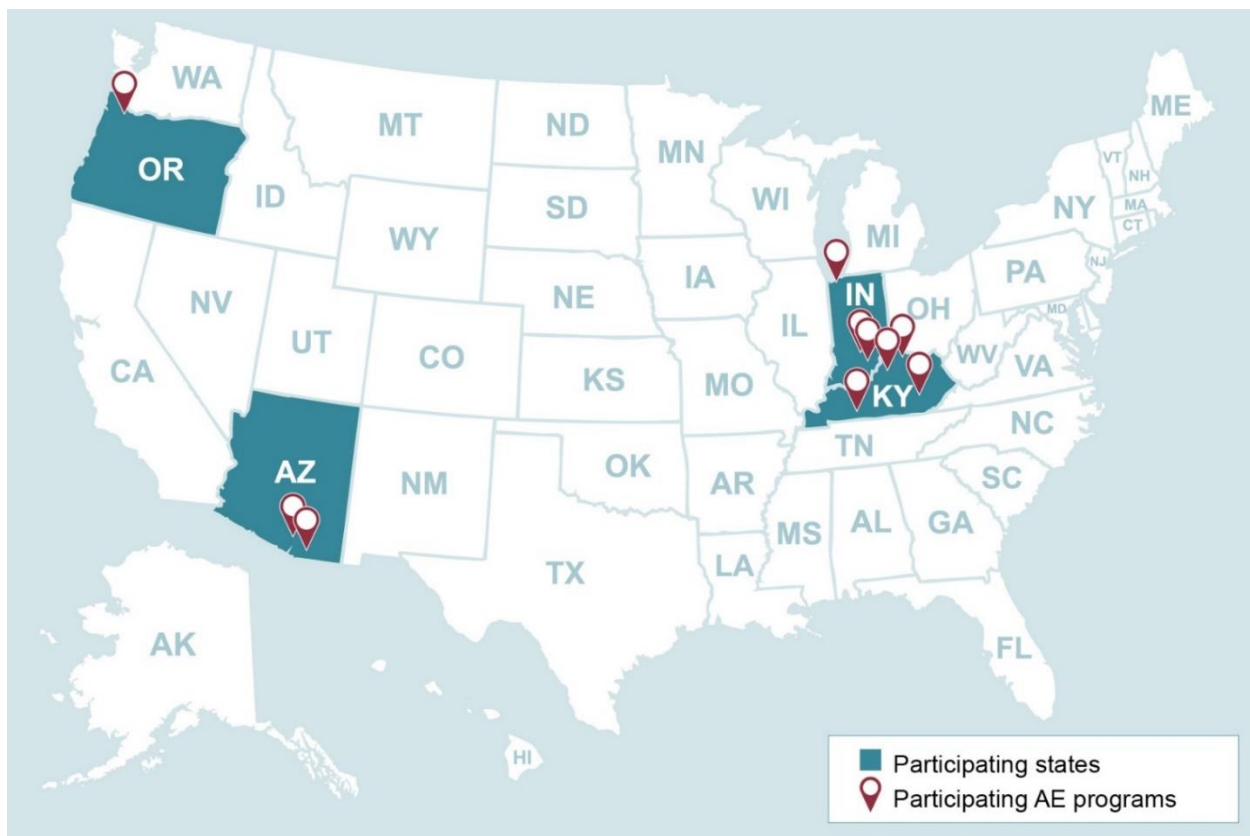
This *Final Report for the Technology-Based Coaching in Adult Education (TBCAE) Project* describes the theory of change that guided the project, the key technical assistance activities we conducted to recruit 10 adult education programs, train their adult education staff, and support the implementation of text messaging activities in those adult education programs, and the results from those activities. We provide information about the numbers, types, and topics of the text messages that staff sent to learners, the range of actions that the text messages prompted learners to take, and the perceptions of staff about the usefulness of individual and customized text messaging.

We have prepared a companion document to the final report, the *Technology-Based Coaching in Adult Education (TBCAE) Toolkit*, which provides guidance for adult education local program and state staff about planning and implementing the use of individual and personalized text messages to support adult education learners' persistence and progress toward achieving their educational goals.[9] The toolkit highlights the approaches to using text messaging that adult education staff participating in the TBCAE project found to be helpful; provides examples of how to personalize text messages to address each learner's specific needs; and describes the types of data to collect to assess the utility of using text messaging.

TBCAE Approach and Theory of Change

Guiding Research

The design of the TBCAE project was informed by research on adult motivation, persistence, and academic self-efficacy, and by our experience conducting the U.S. Department of Education–funded study of the Transition Planning Process (TPP) that was implemented in six of Oregon's Adult Basic Skills programs. The TPP study assessed the impacts of the use of text messaging on adult learners' attainment of a General Educational Development (GED®) credential and enrollment in postsecondary education. It was an initial effort to conduct a rigorous evaluation of the role of individual text messaging in adult education programs.[10]

As part of the TBCAE project's design process, we examined the limited research on adult education program learners, as well as studies of college students to understand which factors predict their academic success and would be important to reinforce through text messaging. Though meta-analytic studies have shown that a strong predictor of academic success is academic achievement, these studies also point to the importance of achievement motivation and academic self-efficacy as significant predictors of academic success.[11] Research on adult education learners' development of reading and writing skills also supports the importance of academic self-efficacy in their development of foundational skills.[12] These findings reinforce the

[9] Alamprese, J. & Cheng, I-F. (2021). *Technology-based coaching in adult education(TBCAE) toolkit*. Abt Associates. https://lincs.ed.gov/sites/default/files/2022-03/tbcae-toolkit.pdf

[10] Alamprese, J. (Principal Investigator). (2017-2019). Study of Effects of Transition Planning Process (TPP) on Adult Basic Skills learners' GED® attainment and enrollment in postsecondary education (Award Grant No. #R305L170012). U. S. Department of Education, Institute of Education Sciences. https://ies.ed.gov/funding/grantsearch/details.asp?ID=1950

[11] Robbins, S. B., Lauver, K., Le, H., Davis, D. Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes ? A meta-analysis. *Psychological Bulletin*, 130(261), 261-288. https://typeset.io/papers/do-psychosocial-and-study-skill-factors-predict-college-3pfzfiwl9u

Markle, R., & O'Banion, T. (2014). Assessing affective factors to improve retention and completion. *Learning Abstracts*, 17 (11). https://www.league.org/occasional-papers/assessing-affective-factors-improve-retention-and-completion

[12] National Research Council. (2012). Improving adult literacy instruction: Supporting learning and motivation. The National Academies Press. https://doi.org/10.17226/13469

professional wisdom of adult education staff that learners often need a range of academic and affective supports to succeed in achieving their educational goals.

We also reviewed research on the delivery of automated group messages to students entering and participating in postsecondary education, which have had mixed findings.[13]

Based on those results and our work on text messaging with adult education learners in the TPP study, we focused the TBCAE project on adult education program staff's delivery of individual and personalized text messages that can be supplemented with group text messages.

Theory of Change

We developed a theory of change for the TBCAE project that is shown in Exhibit 2. Specifying a theory of change helped us to confirm our assumptions about the project and the presumed relationship between the activities we were planning and adult education learners' immediate, near-term, and longer-term outcomes.

Exhibit 2. TBCAE Theory of Change
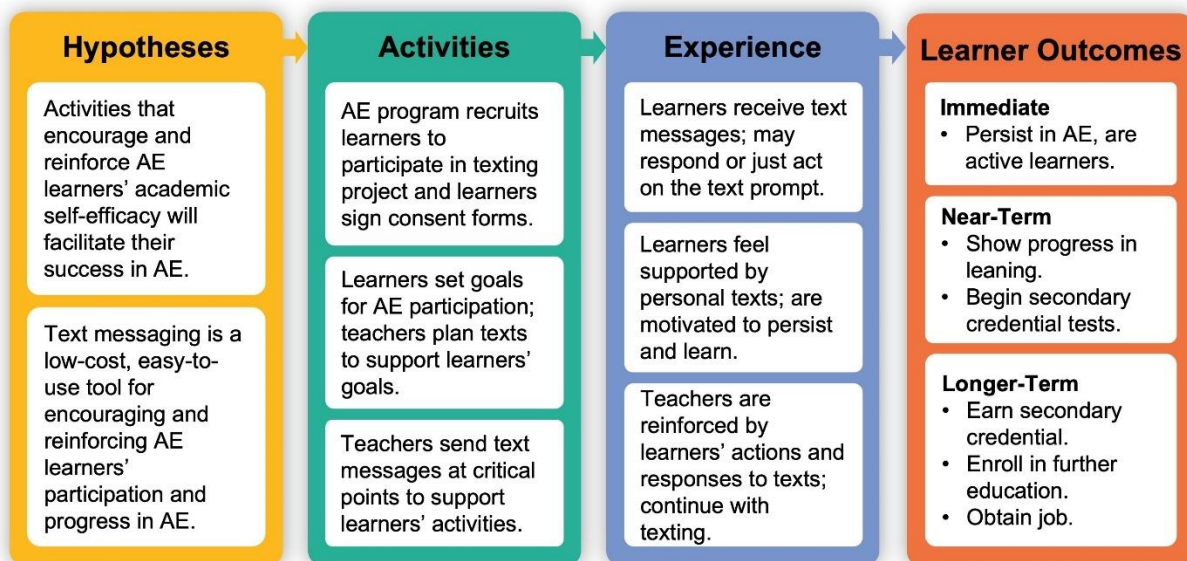
As shown in the **Hypotheses** column of the theory of change, we assumed the actions of adult education (AE) staff, such as providing feedback to AE learners to reinforce their learning and sending prompts that enable learners to move toward achieving their goals, could reinforce learners' participation and lead to their eventual success. We also assumed that a low-cost, easy-to-use tool such as text messaging was one that AE staff actually would use.

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[13] Oreopoulos, P., & Petronijevic, U. (2019). The remarkable unresponsiveness of college students to nudging and what we can learn from it. Working Paper 26059. National Bureau of Economic Research. https://www.nber.org/papers/w26059

As shown in the **Activities** column, we believed that having a series of text-messaging implementation steps could facilitate AE programs' use of text messaging. Those activities are (1) recruiting learners who are interested in using text messaging to communicate with the program's staff, including Navigators, Resource Specialists, Success Coaches, or Instructors; (2) asking staff to plan text messages based on learners' goals for attending the program; (3) and asking staff to send primarily individual and personalized text messages at critical points in learners' participation to support their activities. Learners also would need to sign consent forms so that Abt could access their text messages to analyze for the project's final report.

As shown in the **Experience** column, we believed that staff's delivery of text messages would prompt a response from learners, or if they did not respond they might still act on the information they received from staff in text messages. We also believed that learners would feel supported by personalized text messages and staff would be reinforced by learners' behavior.

Finally, as shown in the **Learner Outcomes** column, we assumed that text messages could lead to immediate learner outcomes, such as increased learner persistence, and that text messages could contribute to near-term outcomes such as enhanced foundational skills, which learners' improved attendance and increased engagement would help to support. Furthermore, learners' enhanced skills would enable them to earn a secondary credential, enroll in further education, or obtain employment.

Based on this theory of change, we developed the project's implementation activities. Those activities were aimed at supporting adult education programs' staff to use primarily individual and personalized text messages that could help learners address their barriers to participation, complete their programs' activities, and move forward in achieving their goals.

Implementation of TBCAE Project

Abt Associates' implementation of the TBCAE project involved:

- Recruiting adult education state offices and local programs to participate in the project.

- Developing materials and providing technical assistance to adult education program staff in planning their TBCAE project activities and in preparing staff to use text messaging with learners.

- Providing ongoing assistance to adult education program staff in recruiting participants, using the text messaging platform, delivering text messages, and documenting learner actions from the text messaging.

- Disseminating information about the project's progress at national conferences.

State and Program Recruitment

The project's recruitment activities involved identifying four state adult education offices that wanted to explore how the use of text messaging could enhance learners' participation and progress in adult education programs. We recruited Arizona, Indiana, Kentucky, and Oregon because of their prior work with text messaging or their interest in determining whether text messaging could be beneficial to staff and learners. We met virtually with states' adult education directors and/or their staff to discuss the project and its requirements. The state staff then provided the names of adult education programs that would be candidates for the project.

We contacted 11 candidate adult education programs to determine their interest in participating in a year-long project to test using individual and personalized text messaging with their learners. Ten programs agreed to participate.

The 10 programs began their participation at different times partly due to scheduling issues related to the COVID 19 pandemic. Kentucky's four programs began during winter 2020. One of Indiana's programs began in spring 2020 and the other two programs began in summer 2020. Oregon's program began in summer 2020 and Arizona's two programs began in fall 2020. All of the programs continued their text messaging activities through June 2021.

Adult Education Programs in the TBCAE Project

Arizona
- Cochise College
- Pima Community College

Indiana
- Jennings County Educational Center
- McDowell Education Center
- Neighbors' Educational Opportunities

Kentucky
- Gateway Community & Technical College
- Laurel Adult Education & Literacy
- Southcentral Kentucky Community & Technical College
- Thorn Hill Education Center

Oregon
- Mt. Hood Community College

Technical Assistance Activities

We provided training and technical assistance to participating adult education programs in two phases of activities. To support program staff's work during the planning and implementation phases of the project, we developed forms and tools that staff could use to gather and analyze information, record decisions, and specify their next steps.

Planning Phase. The first phase was a planning process in which we worked with the staff from each program in virtual meetings to develop a plan for their use of text messages to support learners. Although about two-thirds (61%) of the staff participating in the TBCAE project had used text messaging with learners prior to the project, most had used it to check on learners who were not attending classes or to remind them of deadlines. In contrast, we encouraged staff to consider a variety of ways they could use text messaging as a planned, integral part of adult education services. These included providing feedback on learners' work in class to help build their academic self-efficacy, assisting learners to address their barriers to participation, and sending information to learners about assignments, resources, and upcoming events.

We worked with the program directors and key staff in virtual planning teams to review their programs' data on learners' attainment of their goals and identify the types of barriers that learners face in remaining engaged and achieving their goals. The planning teams identified the learner goals they wanted to support through text messaging and the subpopulation of learners with those goals whom they thought would participate in the text messaging. We recommended that the programs begin with a targeted group of learners to pilot test the use of individual and personalized text messages, especially in light of the disruption that the COVID 19 pandemic was causing in the programs.

Steps in Planning Phase

1. Specify Goals for Using Text Messaging with Learners

2. Identify Populations of Learners Who Will Be Sent Text Messages

3. Identify the Staff Who Will Send Text Messages to Learners

4. Determine Options for Sending Text Messages to Learners

The planning teams also considered the types of staff who would deliver the text messages. For example, the Kentucky programs had instituted a new position of College and Career Navigators and wanted to pilot test having the navigators use text messaging to support learners progress in implementing their college and career plans. Oregon's program wanted to use their Student Resource Specialists to move learners toward earning their high school equivalency (HSE). In Indiana, the programs wanted to involve instructors and coaches to support learners HSE attainment and participation in Integrated Education and Training programs. One of Arizona's programs involved Success Coaches who supported learners in completing their HSE, the other in enrolling in a new GED® success program.

The last activity of the planning phase was to review the software that the programs would use to deliver text messages. As part of the TBCAE project, we provided the programs with access to the Signal Vine text messaging platform that had been used in Abt's prior text-messaging projects. All of the participating programs except for Oregon's used the Signal Vine platform. Because Oregon's adult education state office was supporting access to the Remind platform for its Adult Basic Skills programs, Oregon's participating program used that.

Implementation Phase. Next we conducted a series of training and technical assistance webinars to guide the participating program staff in how to recruit learners to enroll in the project, how to develop and deliver individual and personalized text messages, the role of group text messages, and the use of the Signal Vine text-messaging platform. We conducted two training webinars for each state separately because the months during which programs began their implementation activities differed. We prepared a text-messaging implementation guide that included sample text-message prompts that aligned with some of the learner goals that the programs had selected as the focus of their text-messaging activities. The information for this guide was drawn from Abt's study of Oregon's Transition Planning Process, which involved text messaging. In addition to the training webinars, we conducted three telephone conference calls during the implementation phase with each state's participating programs to check on the progress of learner recruitment, and to provide staff with assistance in developing text

messages and tracking learners' immediate and near-term outcomes from receiving text messages. Program staff also shared their progress and activities during the conference calls.

We learned from programs' initial recruitment activities that not all learners wanted to communicate with program staff via text messages, so it was important for staff to establish during program intake whether learners would want to use text messaging as a key means of communication. We also determined that programs needed to adjust learners' expectations for when staff might respond to text messages learners might send in late evening and on weekends.

> **Steps in Implementation Phase**
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> 1. Prepare Staff to Compose Text Messages That Support Learners' Goal Attainment
> 2. Prepare Staff to Send Text Messages
> 3. Prepare Guidelines for Staff's Use of Text Messaging with Learners
> 4. Develop Learner Recruitment and Orientation Processes
> 5. Conduct Survey of Learners on Utility of Text Messages
> 6. Track the Frequency and Topics of Text Messages

Another aspect of implementation was that program staff delivering the text messages had to determine from whom they could obtain the information they needed to help learners. For example, the program Navigators, Coaches, or Resource Specialists needed to be able to check with instructors on learners' academic progress in order to move them toward their educational goals. To support learners who were studying to obtain a HSE such as the GED®, staff needed timely access to learners' GED® test-taking information.

As staff identified the types of information and processes to support the use of text messaging with learners, they shared their insights during the conference calls that we led with the programs in each state.

During these calls, staff discussed the types of issues they helped learners address through the text messaging. From these discussions it was evident that text messages primarily were helping learners move toward their goals by prompting them to complete key activities related to those goals, address barriers to participation, and anticipate problems. That information suggested that text messaging was contributing to learners' immediate outcomes or progress steps, rather than being directly related to their longer-term outcomes such as earning a HSE or completing a dual enrollment program.

Based on this insight, we asked the staff sending the text messages to document the types of activities that learners undertook in response to the text messages they received. This was a challenging process for staff because it required tracking learners' actions from their text messages, which was time-consuming and sometimes not possible. However, staff were able to document some of the immediate outcomes through their text messages with learners.

Summary of Approach. The project's key approach to implementation was to encourage program staff to send primarily individual and personalized text messages that addressed barriers learners were encountering—or, more ideally, to pre-empt barriers by anticipating

events or deadlines that learners would need to meet and to send text messages to prompt them to take an action. We also encouraged program staff to send text messages that encouraged and motivated learners to persist with their studies and take steps to achieve their longer-term goals, such as earning a HSE credential.

Dissemination. An important activity in the project was to engage in ongoing dissemination to raise awareness about the project's activities and provide updates on the information we were learning about the use of individual and personalized text messaging in adult education programs. During the implementation phase of the project, we conducted virtual and hybrid presentations at adult education and workforce education conferences to share the progress of the TBCAE project and to prompt interest in the TBCAE toolkit that Abt finalized in December 2021. We presented at the following conferences:

- Coalition for Adult Basic Education Annual Conferences (COABE) in 2020, 2021, and 2022;

- National Council for Workforce Literacy Conference in 2021; and

- Oregon's Elevating the Essentials Conference in 2021.

In 2022 we also conducted a U.S. Department of Education's LINCS project-sponsored webinar to launch the *TBCAE Toolkit* that we developed as part of this project.

Analyses of Project Data

We analyzed three types of data to describe the results from the implementation of the TBCAE project. We obtained participating learners' demographic and background data from state offices in Kentucky and Indiana and the program in Oregon to understand the characteristics of learners who agreed to be sent text messages as part of the project.[14]

We analyzed the text-messaging data that was stored on the Signal Vine and Remind platforms. We first developed a framework to use in coding the types and topics of text-message conversations and group messages. We defined a "conversation" as one or more connected text messages on the same topic. We coded the approach used by staff in sending text messages. And we coded learners' immediate, near-term, and longer-term outcomes that staff reported. Because of the disruption in programs' learner assessment and other learner data collection during the COVID 19 pandemic, we could not obtain reliable data on learner outcomes for the 2020–2021 program year.

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[14] We worked with the state adult education office in Arizona to obtain TBCAE participants' demographic and background data. However, in the data we received, almost all of the cells on the tables displaying TBCAE participants' data were suppressed because of the small number of project participants in each cell and the state's Data Governance Office's policy of not releasing data in cells with 11 or fewer individuals. Thus, here we do not report background data for the Arizona participants.

At the end of the project's implementation phase, we talked with the program directors and staff who participated in the project. We asked program directors about their assessment of the project and whether it was implemented as they had expected. We asked program staff about their perceptions of the helpfulness of sending learners individual and personalized text messages and about their text-messaging practices as a result of the project.

Finally, we conducted descriptive analyses of the data we obtained.

TBCAE Project Findings

The TBCAE project's goal was to explore the potential of text messaging to support the engagement and success of learners in adult education programs. In the sections that follow, we provide information about the background of adult education program learners who chose to participate in the project; the types, topics, and numbers of text messages that were sent during the project; and learners' immediate, near-term, and longer-term outcomes that staff documented. We also discuss program staff's perceptions about their use of text messaging as a result of the project.

Project Participants

The 10 adult education programs in the project recruited 537 adult learners to participate in the project. Of those recruited, 423 (79%) consented to participate. The program staff collected information from 34 of the other 114 learners about why they did not consent. The three most frequent responses, in order of magnitude, were that learners (1) preferred another form of communication, (2) did not want to participate without a specific reason, and (3) did not have a cell phone.

Of the 423 learners who consented, three learners left their program before the text messaging began. As a result, 420 learners were part of the project when text messaging began in the programs.

The demographic characteristics of project participants are shown in Exhibit 3. The majority of participants were White women, which is typical of programs nationally. The ages of participants varied across states, with Kentucky serving participants who were younger than those in the other two states. The majority of learners in the three states entered their adult education program with some years of high school, as would be expected. About half of the participants from the Indiana programs had some level of non-U.S.–based education.

Exhibit 3 . Demographic Characteristics of TBCAE Participants at Project Entry

Demographic Characteristics	Learners Across Programs (N=261)	Indiana Learners (N=134)	Kentucky Learners (N=83)	Oregon Learners (N=44)
Gender				
Men	27%	48%	27%	5%
Women	73%	52%	73%	95%
Race/Ethnicity				
Race				
White, non-Hispanic	70%	79%	81%	50%
Black, non-Hispanic	7%	5%	8%	9%
Asian	2%	1%	4%	0
More than One Race	5%	10%	0	5%
American Indian/Alaska Native	1%	0	1%	2%
Native Hawaiian/Other Pacific Islander	0	0	0	0
Ethnicity				
Hispanic	15%	5%	6%	34%
Age				
16-18	17%	43%	0	9%
19-24	21%	19%	28%	18%
25-44	48%	24%	62%	57%
45-54	9%	9%	8%	9%
55-59	3%	2%	0	7%
60+	2%	3%	2%	0
Highest Degree or Level of School Completed				
No Schooling	<1%	1%	0	0
Grades 1-5	1%	0	2%	0
Grades 6-8	6%	2%	13%	2%
Grades 9-12 (no diploma)	65%	82%	82%	32%
Secondary School Diploma or Alternative Credential	3%	8%	0	0
Secondary School Recognized Equivalent	1%	1%	1%	0
Some Postsecondary Education, No Degree	1%	1%	2%	2%
Postsecondary or Professional Degree	1%	4%	0	0
Unknown	21%	0	0	64%
Location of Schooling				
U.S.– Based Schooling	75%	48%	87%	91%
Non-U.S.– Based Schooling	25%	52%	13%	9%
Missing Data on TBCAE Participants	72 learners	17 learners	55 learners	0

Source: National Reporting System Data from two state adult education offices (Indiana and Kentucky) and one program (Oregon).

Information about participants' background characteristics is shown in Exhibit 4. Oregon's learners began the project with higher Educational Functioning Levels compared to learners from the other states, with almost half scoring at the U.S. Department of Education's National Reporting System Levels 3 and 4 (equivalent to grades 4-8). The skill levels of Oregon's learners reflect their program's goal to use text messaging to support project participants' attainment of a GED®.

More than half of learners were employed at project entry, except for those from Indiana. Their employment levels, as well as their higher percentage of men participants (Exhibit 3), reflect one of the Indiana programs' goals for text messaging, which was to support learners' enrollment in Integrated Educational and Training programs.

The characteristics of Kentucky's learners, who were younger and had slightly lower levels of prior education, reflect those programs' goals of using text messaging to help learners develop career and college plans and to carry out the activities specified in those plans.

Exhibit 4. Background Characteristics of TBCAE Participants at Project Entry

Learner Background Characteristics	All Programs (N=261)	Indiana Learners (N=134)	Kentucky Learners (N=83)	Oregon Learners (N=44)
Entering Educational Functioning Level				
ABE Level 1	2%	4%	1%	0
ABE Level 2	34%	42%	48%	14%
ABE Level 3	35%	36%	33%	36%
ABE Level 4	12%	16%	17%	2%
ABE Level 5	7%	0	0	21%
ABE Level 6	9%	1%	1%	25%
ESL Level 1	<1%	1%	0	0
ESL Level 2	0	0	0	0
ESL Level 3	0	0	0	0
ESL Level 4	1%	0	0	2%
ESL Level 5	0	0	0	0
ESL Level 6	0	0	0	0
Employment Status				
Employed	51%	42%	51%	61%
Employed, but Received Notice of Termination of Employment or Military Separation Is Pending	0	0	0	0
Unemployed	45%	54%	40%	39%
Not in Labor Force	4%	4%	9%	0

Key: ABE=Adult Basic Education. ESL=English as a Second Language.

Source: National Reporting System Data from two state adult education offices (Indiana and Kentucky) and one program (Oregon).

The 10 adult education programs that participated in the TBCAE project included 14 program sites; 25 staff from those sites delivered text messages as part of the project (Exhibit 5). Of the 420 learners who consented and were enrolled in their program when the project's text messaging began, 286 (68%) learners who received an initial text message inviting them to use the text messaging platform for the project also responded to the message. Another 106 (25%) learners received an initial text message but did not respond to the program staff member who sent it. We consider these 392 learners as having had some intervention from the project and have included them as the sample for analyzing the text messages. The 28 learners who were excluded from the sample are the four learners who did not receive an initial text message and 24 learners whose text messaging was conducted in Spanish and could not be analyzed.

Exhibit 5. Summary of TBCAE Project

Participants	Number
Adult Education Programs	10
Adult Education Program Sites	14
Staff Who Sent Text Messages	25
Learners Who Received Initial Text Message and Responded	286
Learners Who Received Initial Text Message and Did not Respond	106

Use of Text Messages

In developing their TBCAE project plans, the program director and staff from the10 programs identified the learners' goals that staff would support by sending individual and personalized text messages. The goals for learners were:

- Progress in learning, enter a Success Class.

- Attain a HSE credential.

- Complete dual enrollment program or an Integrated Education and Training Program.

- Prepare to transfer to further education, training, or employment.

During the implementation phase of the project, the programs' staff engaged in a total of 1,572 text message conversations and sent 343 group messages.

Purposes of Text Messages. We first examined the primary purposes of the messages that program staff sent to learners. During the staff training for the TBCAE project, we discussed the types of messages that would engage learners and prompt them to respond to staff. Staff concurred that asking learners questions was one strategy that would engage them. As shown in Exhibit 6, about two-thirds of the text messages sent to learners were questions, while almost half were responses to questions. A quarter of the text messages offered encouragement or reinforcement to learners, and similar percentages of text messages provided encouragement, updates, information, and feedback to learners.

Exhibit 6. Primary Purposes of Text Messages Staff Sent to Learners

Primary Purpose	Percentage of Messages
Ask Questions	68%
Respond to Questions	44%
Provide Encouragement, Positive Reinforcement	25%
Provide Updates, Explanations, Rationales	19%
Provide Information, Materials, Resources	19%
Provide Guidance, Advice	18%
Acknowledgement, Thank You	18%
Provide Feedback	17%

Topics Addressed in Text-Message Conversations. We identified nine topics that were addressed in the text-message conversations, which we organize into three categories. One category is **program management**, which includes text messages in conversations that address a range of administrative procedures such as the schedule of classes, procedures for class enrollment, and procedures and costs for courses and dual enrollment. Program management also includes the use of technology, such as the access to and cost of technology, and COVID-related information.

A second category is **learner progress**, which includes text-message conversations about learners' overall progress, such as learners' attendance, progress toward goals, and connection of learners to other staff. Learners' academic progress includes text-message conversations related to provision of materials and resources, study skills and advice, and adult education course selection. The learner progress category also includes preparing for and earning a HSE credential and learner's personal well-being. The well-being topic includes barriers to learner persistence.

The third category is text-message conversations about **next steps for education and training,** which includes planning next steps, participation in Integrated Education and Training services, career and college awareness, tuition and

> **Example Text Conversation**
> *Between AE Success Coach and Learner*
>
> **AE Success Coach:**
> Hi Nina, Checking in. What are you currently working on?
>
> **Learner:**
> I'm working on my math.
>
> **AE Success Coach:**
> Do you need anything?
>
> **Learner:**
> Not for math. Mickey is great. I think I might ask you for Social Studies because I didn't pass my Social Studies. I was focusing on graphs instead of the history and civics. 80 percent of the test was mostly like civics.
>
> **AE Success Coach:**
> Do you have a Civics book?
>
> **Learner:**
> I have some notes from Alice's class and the books you gave me.
>
> **AE Success Coach:**
> I just sent you a few more things. Check your email. Also, I am reviewing Social Studies on Tuesdays and Thursdays at 8:30 if you want to join Zoom.
>
> **Learner:**
> OK, that would be perfect for me. Tuesdays and Thursdays next month, right? Well next week.

financial aid, and related topics. This category also includes text-message conversations concerning next steps for employment.

The analysis of the topics of the text-message conversations provides information about learners' goals and barriers they encountered. The topics also reflect program staff's approach to supporting learners. We analyzed the text messages in terms of conversations involving messages rather than individual text messages in order to capture the substantive meaning of the series of related text messages. Because conversations usually involved short individual text messages acknowledging receipt of a message (e.g., "Got it") or thanking the sender as well as substantive text messages, it made sense to code strings of related text messages rather than individual text messages.

As shown in Exhibit 7, program staff's text-message conversations addressed a range of topics, but the topics with the highest percentage of conversations concern learners' overall progress and the preparation for earning a HSE. The next most frequent topic concerns programs' administrative procedures, followed by learners' academic progress, preparing for transition to further education or training, and learners' personal well- being. Less than 10 percent of the text-message conversations concerned use of technology, next steps to prepare for employment, or COVID-related information. Those distributions make sense given the learners' goals that the programs selected as the focus of their text-messaging activities.

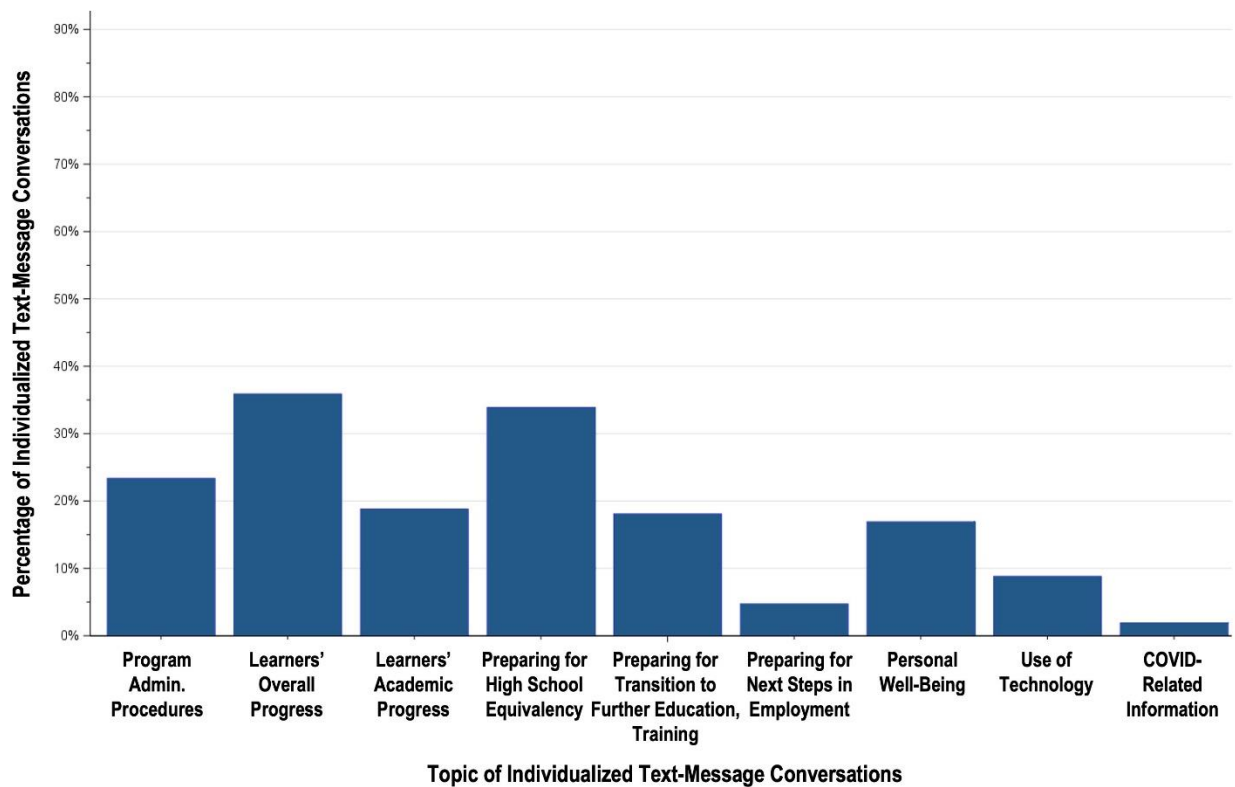**Exhibit 7. Percentage of Text-Message Conversations by Topic**

Exhibit 8 shows the number of text-message conversations by topic. Slightly more than 600 conversations (38%) addressed learners' overall progress, and 575 conversations (37%) concerned preparation for a HSE.

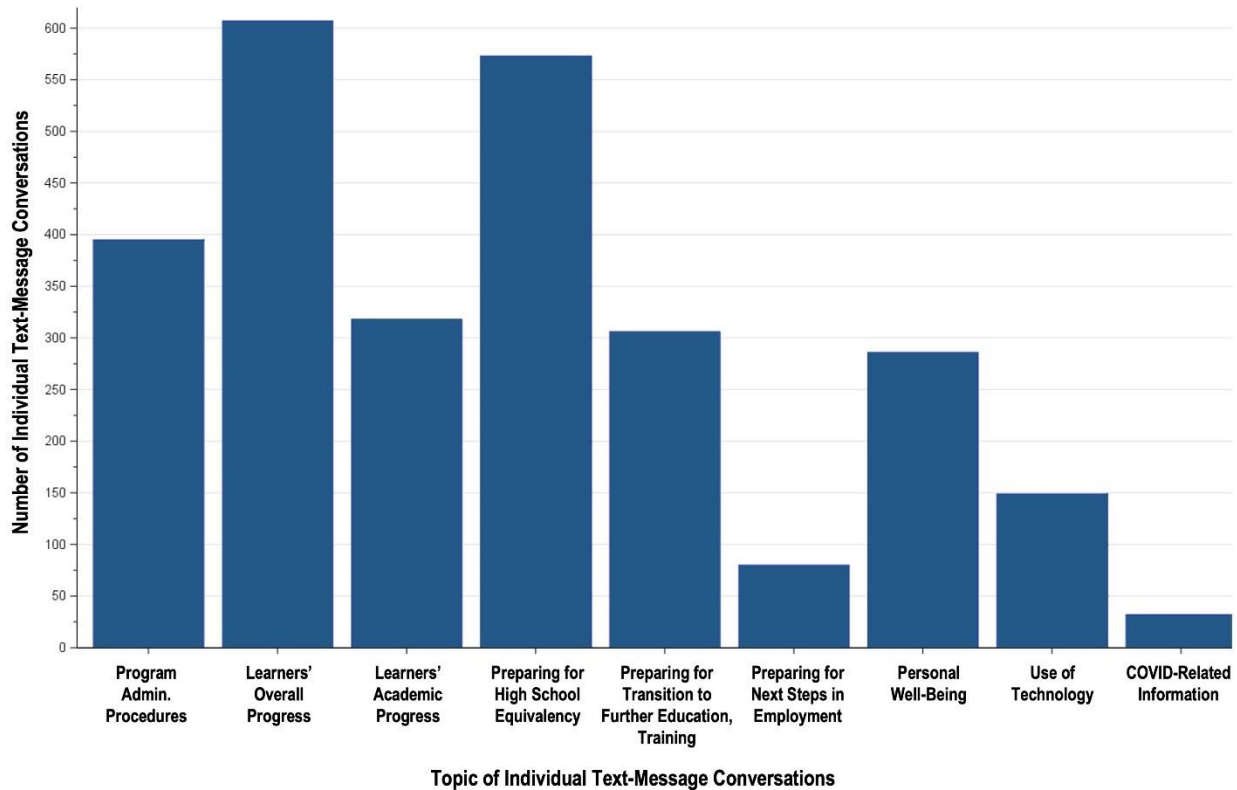**Exhibit 8. Number of Text-Message Conversations by Topic**

Exhibit 9 provides information on the alignment between learners' goals for participating in the adult education program and the topics of the text messages that the program staff sent to learners. The "Goals" column lists the learners' goals that were the focus of each program's pilot test of text messaging. The topics shown in the exhibit are the six of the nine coded topics that have the most conversations. Highlighted in red with an asterisk are the topics of the text-message conversations that match the goals that the staff were supporting through text messaging. In nine of the programs, the highest percentage of text-message conversations that occurred are aligned with the programs' goals for using text messaging. Six of the programs focused on using text messaging to support learners' attainment of a HSE. The staff from three of those programs engaged in a high percentage of text-message conversations about learners' overall progress. All programs sent text messages that addressed more than one topic. This pattern of text messaging suggests that staff attended to the varied needs of learners as they supported learners in their main goal for participating in the program. Overall, the exhibit shows that the staff focused their text message conversations on the goals they were encouraging learners to accomplish.

Exhibit 9. Alignment of Program Goals with Text-Message Conversation Topics

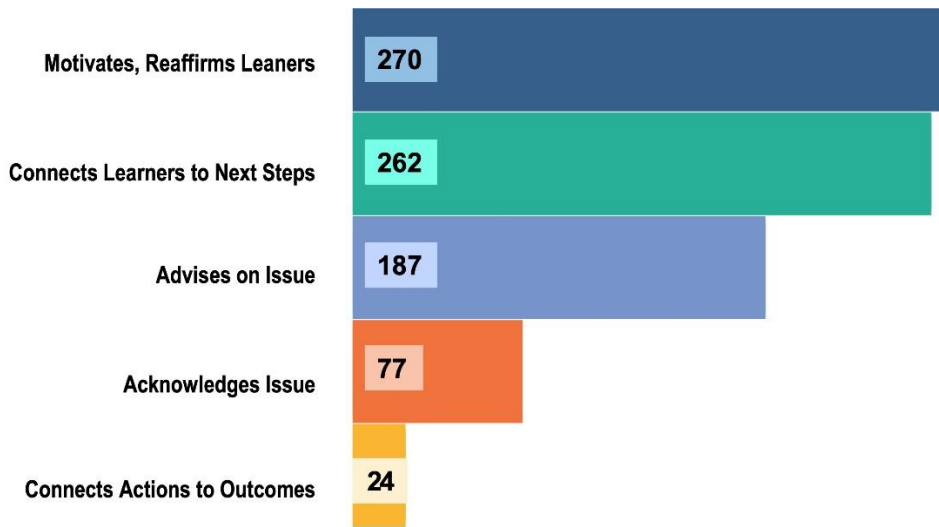| Program	Goals	Primary Topics of Text-Message Conversations					
		Admin. Procedure	Overall Progress	Academic Progress	HSE	Transition	Well-being
A	HSE	28%		28%	45%*		
B	Placement	50%*	18%	18%			
C	Progress, HSE		35%*	30%	38%*		
D	Transition		38%			45%*	3%
E	Progress	41%	62%*				31%
F	HSE, Transition		45%		31%*	34%*	
G	HSE				56%*	28%	23%
H	Progress	25%		48%*	32%		
I	HSE	34%			45%*	18%	
J	HSE	20%	55%		42%*		

Key: HSE=high school equivalency.

Note: Rows do not total 100% because conversations could be coded as addressing more than one topic. Percentages in red font with an asterisk in each row indicate the topics that were aligned the programs' goal for using text messaging.

Another aspect of the text-message conversations we examined was the staff's approach in framing their text messages. The "approach" is the way staff went about framing their text messages or delivering the information or advice they wanted to communicate to learners. In coding the text message data, we examined the string of text messages in each conversation and determined the approach or approaches that staff used in their communication.

Exhibit 10 shows the number of learners who were in text-message conversations across the different approaches. Not surprisingly, the highest number of text-message conversations involve motivating and reaffirming learners. However, almost as many conversations involve connecting learners to a next step to keep them focused on achieving their goals. The other three approaches were to provide advice to learners on issues; acknowledge an issue without necessarily advising learners; and connect learners' actions to their desired outcomes as a way of helping learners understand that if they take an action or persist, they are more likely to reach their goals. The data suggest that program staff were supportive and nurturing as they nudged learners along in carrying out the activities required to progress in learning, attain a HSE, or transition to further education, training, or employment.

Exhibit 10. Staff Approaches Used in Text- Message Conversations, by Number of Learners

Approach	Number of Learners
Motivates, Reaffirms Leaners	270
Connects Learners to Next Steps	262
Advises on Issue	187
Acknowledges Issue	77
Connects Actions to Outcomes	24

Note: Totals more than 392 learners because conversations could be coded as involving more than one approach.

We also analyzed the 343 group messages that staff sent. As shown in Exhibit 11, half of the messages addressed program administrative procedures, which would be expected. Almost 30% of the group messages concerned information about preparing for a HSE. Not surprisingly, the topic with the fewest group messages concerns learners' personal well-being. Some of the group messages became individual conversations between a learner and staff member, and those messages were analyzed as conversations.

Exhibit 11. Percentage of Group Messages, by Topic
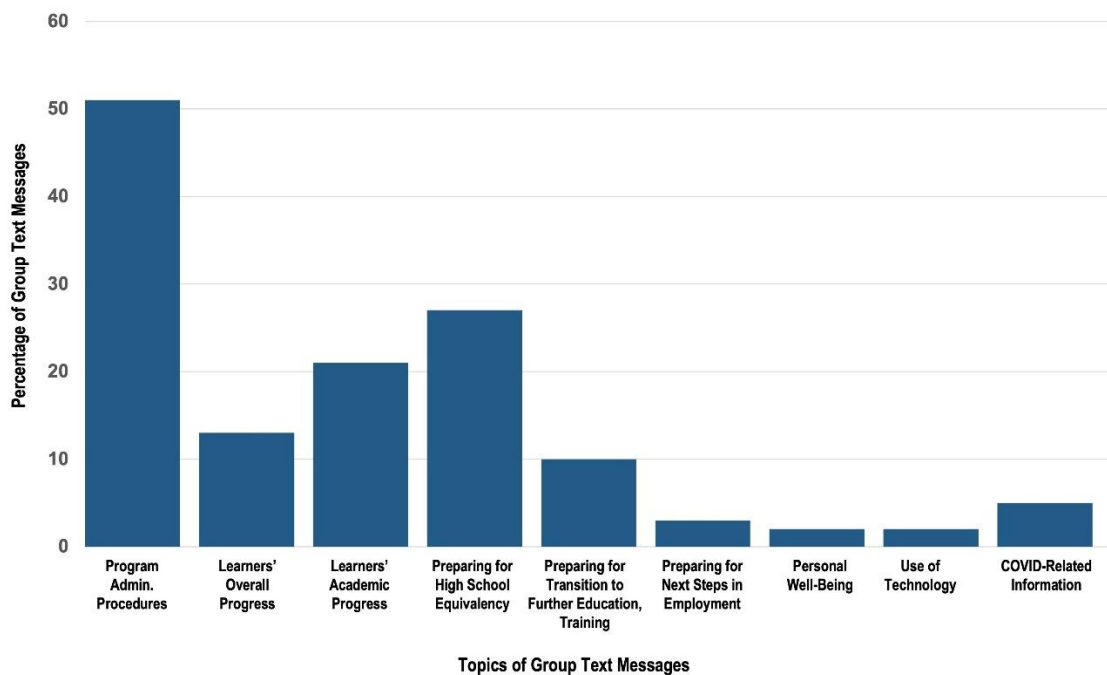
Outcomes for Learners from Text-Message Conversations. Because the programs' learner outcome data were not available for this report, we analyzed the content of the programs' text-message conversations to identify the types of outcomes that were mentioned in the text messages. Though these data do not represent the total number of outcomes that learners achieved during the project's implementation phase, they provide a snapshot of the types of outcomes learners achieved as reported in the text messages. The activities in Exhibit 12 illustrate the many progress steps that program staff reinforced via text messaging to keep learners engaged and progressing.

Exhibit 12. Learners' Adult Education Outcomes and Progress Activities from Text-Message Conversations

Outcomes and Progress Activity	Number
Graduates from ABE Program	11
Completes GED® Success Class	12
Completes TABE® Post Test	8
Enrolls in Next ABE Class	6
Addresses Barriers to Participation	56

Kay: ABE=Adult Basic Education. TABE®=Tests of Adult Basic Education

This exhibit also shows the emphasis that program staff had on addressing learners' barriers to participation, which we emphasized during the technical assistance provided to staff.

Exhibits 13 and 14 show the range of activities that learners engaged in to attain a HSE credential and transition to next steps in employment or participate in Integrated Education and Training and dual enrollment programs. The data illustrate the multiple steps that learners need to take to achieve their near-term and longer-term goals, and that the content of these steps is among the topics that adult education program staff can reinforce through the use of individual and personalized text messaging. The steps also suggest that program staff will likely need to coordinate so that non-instructional staff, such as Career Navigators and Resource Specialists, can access learners' academic progress or administrative information to move learners forward.

Exhibit 13. Learners' HSE Outcomes and Progress Activities from Text-Message Conversations

Outcomes and Progress Activity	Number
Earns HSE Credential	48
Passes 1 or More HSE Subject Tests	76
Takes 1 or More HSE Subject Tests	48
Schedules 1 or More HSE Subject Tests	20
Completes HSE "Ready" Test	34
Passes Arizona Civics Test	3
Schedules Arizona Civics Test	2
Re-enrolls in HSE Class	2

Exhibit 14. Learners' Transition Outcomes and Progress Activities from Text-Message Conversations

Outcomes and Progress Activity	Number
Obtains Employment	4
Interviews for Employment	1
Earns Occupational Certificate, Completes Program	16
Passes Clinical Exam	2
Takes Occupational Certificate Exam	2
Registers for Occupational Certificate Exam	17
Places in Externship for Occupational Training	8
Attends Integrated Education and Training Orientation	2
Is Placed in Postsecondary Education, Training	33
Applies to Postsecondary Education, Training	6
Completes Financial Aid Form	1
Sets Goals for Next Steps	28

Finally, the lists in Exhibits 12, 13, and 14 suggest that the program staff participating in the TBCAE project were diligent in tracking learners' activities and in supporting them in carrying out a range of activities associated with their goals.

Program Staff and Leadership Perceptions of Text Messaging

Program Staff. We asked program staff who had used text messaging with adult education learners prior to the TBCAE project about the effects of the project on their use of text messaging with learners. Of the 13 staff who has previously used text messaging, 93 percent said that the project prompted them to use text messages in a different way; 85 percent said they sent more individual messages during the project. Three-quarters (77%) of staff who had previously used text messaging also reported sending individual messages more often. Slightly more than half (54%) of those staff reported sending individual text messages on a wider range of topics than they had previously addressed via text messaging.

The program staff who had not previously used text messaging to communicate with adult education learners reported that it took them time to determine for what purposes they would

Program Staff's Perception of Use of Text Messaging

"For students who were more responsive, we both got a lot out of it. I was able to connect more closely with certain students than I have been able to in the past. I feel like we would make calls and do emails but with texting you can really do that immediate response and ask them quick questions and they can get back to you. It really helped to get the information we both needed a lot faster and it was easier to ask questions and get them resources more quickly and I also liked to use it as a follow up to phone meetings with students. For example, I'm working with one student on enrolling her in a college program and financial aid and there were questions she had about whether she has a dependent, so some of that we were doing over the phone or email but any other questions, I could send a text and she was responsive to that."

use text messaging. After they began using it and learners responded, they felt more comfortable. Staff noted that though their preferred mode of communication with learners was in-person meetings on topics such as addressing learners' barriers to participation and possible next steps in education, the changes in program schedule and access to learners because of the COVID 19 pandemic prompted them to use text messaging.

All staff reported that the text-messaging platforms were easy to use. However, staff noted that Signal Vine's mobile app did not function very well, and it would have helped to be able to use the app to send or respond to text messages when they were not at their computers. Staff also said that it was sometimes difficult to keep motivated when learners did not respond to text messages. Although staff recognized that learners might be acting on their guidance even though learners did not respond, staff would have appreciated learners' feedback.

Program Directors. Our discussions with the directors of the 10 participating programs about their perceptions of the implementation of the project indicated that they were pleased with how the project had been carried out. Some directors noted that it was helpful to try out the text messaging with a targeted group of learners who shared the same goals for participating in the program. This pilot test enabled staff to focus on the types of reinforcement and information that learners needed on a specific set of activities rather than trying to meet the needs of a wider range of learners. A couple of directors observed that it was sometimes difficult to determine the line between nurturing and nagging in reminding learners about the tasks they had to complete, and that staff tried hard to use a nurturing approach in framing their text messages.

Conclusions

Our analyses of the text messages and the feedback we received from the staff and program directors participating in the TBCAE project indicate that individual and personalized text messages can help adult education learners move forward in carrying out the varied activities that can lead them to attaining their immediate and near-term goals. For the TBCAE project, those goals were adult education program participation and completion; secondary credential attainment; and transition to next steps of further education, training, or employment. The data also indicate that there are many activities, large and small, that learners must complete to succeed and that they may need prompting and support for this range of activities.

The feedback from program staff suggests that having a well-structured plan and process for using text messaging in an adult education program can facilitate staff's work and provide learners with strong support for their participation. The use of a text-messaging platform can enable staff to use text messaging in a secure environment. The use of a platform can also enable staff to identify patterns in text messages that reveal new barriers to learners' participation and the types of guidance, support, and resources that appear to assist learners in addressing their barriers. This information can be used by adult education programs in guiding their management and provision of services.

Our analysis of text message conversations in the TBCAE project provided documentation of the challenges that adult education learners face in working to achieve their education goals and the constantly changing environments in which they live. The implementation of the project during the first year of the COVID 19 pandemic also was a unique opportunity to examine adult education programs' capacity to redirect their delivery of services while addressing new barriers to learners' participation occurring as a result of the pandemic. The timing of the project enabled us to identify how text messaging as a way to communicate with, counsel, and connect adult education learners with resources can be effective under very challenging circumstances for adult education programs.